P.2021/45

THE STATES OF DELIBERATION
of the
ISLAND OF GUERNSEY

STATES TRADING SUPERVISORY BOARD

FUTURE HARBOUR DEVELOPMENT

The States are asked to decide:-

Whether, after consideration of the Policy Letter entitled 'Future Harbour Development' of the States' Trading Supervisory Board, they are of the opinion:-

1. To approve Combination 5 as the preferred scheme for the future development of Guernsey's harbours i.e. to reconfigure operations in St Peter Port Harbour; construct a new northern port at Longue Hougue South for some freight operations; convert St Sampson's Harbour for leisure use only; improve the leisure sector offering in St Peter Port and carry out essential repairs to the current harbours, as set out in the Policy Letter and in particular in paragraphs 8.13 to 8.17.

2. To approve the Future Harbour Development as a pipeline project in the capital portfolio, for ratification by the States as part of the Government Work Plan and to direct the Policy & Resources Committee through its seafront regeneration sub-committee, in respect of its role for developing the Seafront Enhancement Area, and in consultation with the States' Trading Supervisory Board, to develop more detailed proposals, including the costs and associated benefits, as set out in paragraph 11.14 of this Policy Letter, and submit those proposals to the States for approval, by December 2022.

3. To direct the Policy & Resources Committee, in consultation with the States' Trading Supervisory Board, to ensure that sufficient space within the existing Longue Hougue Reclamation Site is retained, to maximise the potential for stockpiling of inert waste by ensuring that any new [or renewed] leases entered into for the Longue Hougue Reclamation site from the date of this resolution are capable of termination on 12 months' notice or less.

4. If proposition 1 is approved, to direct the Development & Planning Authority to take into account the approval of Combination 5 as the preferred scheme for the future development of Guernsey's harbours in the preparation of the Harbour Action Area Local Planning Briefs for St Peter Port and St Sampson's.

The above Propositions have been submitted to Her Majesty's Procureur for advice on any legal or constitutional implications in accordance with Rule 4(1) of the Rules of Procedure of the States of Deliberation and their Committees.

THE STATES OF DELIBERATION
of the
ISLAND OF GUERNSEY

STATES TRADING SUPERVISORY BOARD

FUTURE HARBOUR DEVELOPMENT

The Presiding Officer
States of Guernsey
Royal Court House
St Peter Port

6th May, 2021

Dear Sir

1 Executive Summary

1.1 Guernsey's harbours at both St Peter Port and St Sampson have fulfilled the needs of islanders for more than 150 years, with the vast majority of the goods the island requires being imported through them. They are key heritage focal points, existing in their current form since the 1800s. The harbour realms provide facilities for social, leisure and business pursuits and provide wider societal and economic benefits to the island. However, there are now serious and pressing issues with the current infrastructure and the evolving needs of port users have created conflicts on both land and sea.

1.2 In May 2019[1], the States directed the States' Trading Supervisory Board (STSB) "to carry out a detailed analysis of the future harbour requirements, including consideration of any requirement for new berth facilities east of the QEII Marina or nearer to St Sampson's Harbour, and an assessment of the impacts, practicalities, and potential benefits of relocating some commercial port operations away from St Peter Port."

1.3 The outcome of this policy letter is significant to a number of other key government work streams. The location and functionality of our harbours clearly has a major bearing on the Seafront Enhancement Area (SEA) work stream; a clear decision on which solution is favoured by the States of Deliberation for future harbour development will permit the strategic development of Guernsey's east coast. The outcome of this debate will also inform the Marine Economy Supporting Plan, which has been identified as a priority in the

[1] Article IV of Billet d'État No. VIII of 2019.

Government Work Plan, as well as the Harbour Action Areas Local Planning Briefs for both St Peter Port and St Sampson's. And while future arrangements for liquid fuel imports are being addressed through a separate work stream - the Guernsey Hydrocarbon Supply Programme (GHSP) - the Future Harbour Development work seeks to accommodate the likely preferred options.

1.4 Reconfiguration of port facilities and relocation of some commercial activities has the potential to release space at both harbours for the development and enhancement of the leisure, social and associated business sectors, providing wider economic benefits to Guernsey. The options set out in this policy letter are based on a detailed study of future demand across the full range of port operations, up to the year 2050, and an assessment of the spatial requirements for the facilities to meet these needs.

1.5 A comprehensive range of solutions has been considered for each sector and location. They include reorganising operations within the current harbours and their immediate vicinity, or future new developments of differing scales and in different locations. These were then assessed to identify which were most practical operationally and likely to provide the greatest benefits. Broadly, the short-listed options include:

- Basic refurbishment of the existing infrastructure at both harbours;
- Reconfigure port facilities within the existing harbours and adjacent land;
- Construct new port developments east of the QEII Marina or at Longue Hougue South;
- Release of land to improve provision for the leisure marine sector;
- Combinations of the above.

1.6 Those short-listed options provide a partial solution to one or more harbour requirements. By linking complementary elements, seven 'Combinations' (or full schemes) emerged:

1 Minimal Change;

2 Reconfigure St Peter Port Harbour;

3 Extend St Peter Port Harbour eastwards;

4 Extend St Peter Port Harbour eastwards and construct a new bulk fuel import facility;

5 Construct a new northern port for some freight and fuel;

6 Construct a new northern port for all freight, fuel and international passengers;

7 Extend St Peter Port Harbour eastwards and construct a new northern port for some freight and fuel.

1.7 These Combinations were then evaluated against one another to assess the "impacts, practicalities, and potential benefits of relocating some commercial activities" and to identify a preferred scheme for the future development of our ports.

1.8 The STSB proposes Combination 5 as the preferred scheme to construct a new northern port for some freight and fuel. This includes the reconfiguration of operations in St Peter Port within the White Rock and North Beach areas, as well as the construction of a new port at Longue Hougue South for unitised, bulk and liquid (fuel) freight. This would free up valuable space in both existing harbours for other uses and development.

1.9 This scheme could, in consultation with HSE, enable the removal of current Major Hazards Public Safety Zones[2] related to the discharge of gas and liquid fuels at St Sampson's Harbour, and allow it to be repurposed for leisure use only, providing the opportunity for wholescale regeneration of the area around the harbour.

1.10 This will allow leisure marine facilities at St Peter Port Harbour to be improved, to significantly enhance the island's Blue Economy offering. This includes potential provision of additional moorings, enabling the accommodation of larger private vessels, more always afloat and walk ashore moorings, and improved shower and welfare facilities for visiting yachts. Significant areas of land around the existing harbour, in prime locations, which are currently used for port operations, would also be freed up for other development opportunities.

1.11 Throughout the course of this work, key commercial port users and representatives from the leisure sector, as well as other interested stakeholders have been consulted and engaged with. As a result of information received from the leisure sector, a marine industry specialist was also commissioned to provide a high level overview of likely leisure boating demand and required facilities, to help inform the development of the leisure sector, in conjunction with the SEA work stream.

1.12 The STSB proposes that the Future Harbour Development is approved as a pipeline project in the capital portfolio, for ratification by the States as part of the Government Work Plan, and that more detailed proposals are presented to the States of Deliberation for approval in due course.

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[2] As defined in the IDP: "An area consisting of the Consultation Distance and Development Proximity Zone around major hazard installations. The purpose of the zone is to manage and limit the number of people who may live, work or congregate close to hazardous sites in order to limit the consequences of any accidents to the public and to ensure that new development does not significantly worsen the current situation should a major accident occur."

1.13 At this stage, the requested inclusion as a pipeline project on the capital portfolio is to progress Combination 5 to the point at which the States will be able to consider more detailed proposals before any development proceeds. The potentially significant investment required for the type and scale of development envisioned in Combination 5 will not be required until much later, with the largest elements relating to the construction phase, which is unlikely to commence before 2027 at the earliest. Full consideration will be given to all funding options, including the possibility of private investment.

1.14 As with our current ports, any new development would represent a long-term investment to meet the island's requirements for generations. Just as our existing harbours have adapted and evolved over decades to meet the island's changing needs, so too would any new facility. Therefore while the STSB proposes to take forward Combination 5, the design of a new northern port could be such that it can be equipped at a later date to accommodate all commercial freight and international passenger activities currently located at St Peter Port Harbour. This would provide the flexibility and adaptability for any developments in, say, vessel design which may make this a more favourable option in the future.

1.15 The strategic importance of the Future Harbour Development work should not be underestimated; this policy letter provides an opportunity afforded to our predecessors on only a few previous occasions, to decide on a strategic direction for the future of our harbours, with the potential to provide lasting benefits for today's islanders and for generations to come.

2 Introduction

2.1 Guernsey relies on importing the vast majority of goods that islanders and local businesses need – from food to fuel, and from building materials to clothing. Approximately 98% of these goods arrive by sea, making the harbours at both St Peter Port and St Sampson's vital lifelines for the island.

2.2 However, our harbours are not just strategically vital. They are iconic, steeped in history, and integral to Guernsey's image and life in the island.

2.3 Facilities provided for visiting private vessels and cruise ships have brought economic benefits through tourism, while marinas for local boats enable popular leisure activities, and support the island's marine services sector.

2.4 The harbours themselves have existed in their current form since the 1800s. They were born of necessity in the Victorian Age and shaped by local industries that are long since gone, to support the lives of islanders from a very different era. Originally, the main export from both ports was granite, and the primary import was coal.

2.5 As demands have changed over the years, the harbours have evolved, adapting and expanding to accommodate every new requirement. They have witnessed the decline of local quarrying and ship building, the rise and subsequent fall of the horticulture industry, and the island's tourism heyday. They have also accommodated the growth and now reducing demand for liquid fuel and gas imports, as well as changes in freight demands as more of what we consume originates off-island.

2.6 The island's main population centres grew up around these bustling ports. To this day they remain thriving communities and centres of commerce and industry. St Peter Port in particular remains a focal point for local heritage, recreation, social and leisure pursuits. The enjoyment of the public realm and viewing points around the harbour enhance the cultural offering of our main town and engender a sense of place to residents and visitors alike. The visual impact of St Peter Port Harbour when arriving by boat also creates a striking first impression of Guernsey.

2.7 St Sampson's Harbour is the focal point of the north of the island. Much of it has remained largely unchanged over the years - vessels still berth alongside the original granite masonry retaining walls, where sailing ships once tied up. As well as being a centre for industry, the harbour and marina are used by local leisure vessels and the area of the Bridge is the island's second main retail centre, and a social hub for many. However, over the years the once vibrant nature of the area has undoubtedly declined. The cultural and heritage offering of St Sampson's Harbour and the Bridge area, as well as their potential to be enhanced, should not be underestimated. The Future Harbour Development project presents what is, potentially, a once in a generation opportunity to address that, and breathe new life into the island's northern capital.

2.8 Despite their long-lasting importance, the current harbours are not sustainable as far as port operations are concerned. A combination of ageing infrastructure and historic underinvestment, at both ports, means considerable investment is now needed simply to maintain the current facilities.

2.9 In St Peter Port, there is overcrowding and conflict between the often competing demands of commercial and leisure sectors as well as other public uses (such as parking), all within the confines of the harbour realm. This presents daily challenges, not least ensuring compliance with International Ship and Port Facility Security (ISPS) standards which are implemented through Guernsey legislation. These requirements have become tighter in recent years - a trend likely to continue - but they have to be met for the island to maintain efficient passage of goods and people between here and the outside world. The current layout of the port is also sub-optimal in terms of ensuring secure and efficient operations.

2.10 The commercial activities of the ports were once the heart of these thriving communities. Now, combined with the many other uses in and around the harbours, they present many conflicts, which can be seen both on land and on water.

2.11 The expansion that has taken place in recent decades has largely been driven by the popularity of leisure boating, which in itself has added further competition for space and pressure on available facilities. Such activities are of course to be welcomed, but accommodating the demands of this sector places additional constraints on other activities.

3 Background

3.1 In May 2019, The States considered a Requête proposing a major development at St Peter Port Harbour[3]. It set out a bold vision for an extensive new port facility, located to the east of the current QEII Marina. Two significant benefits of this proposal were cited.

3.2 First, it would provide a new land reclamation project. In the Requête, it was argued this would be a more beneficial means of disposing of inert waste than extending the current Longue Hougue reclamation site.

3.3 Second, a new port development could alleviate space constraints at St Peter Port Harbour. This would address current operational issues, and free up areas within the existing port for other potential uses. It would also provide the ability to service larger freight-carrying vessels than can be accommodated at present.

3.4 However, the setting as proposed in the original Requête would involve a major redevelopment in an area of unique significance to Guernsey. Among many potential impacts, such a large-scale extension to the east of the existing harbour would permanently and dramatically change the appearance of St Peter Port Harbour, from both land and sea.

3.5 Previous reviews of the island's port requirements had identified options to relocate some commercial activities away from St Peter Port Harbour as a viable solution to the current operational issues. This would present opportunities to refocus activities at St Peter Port towards leisure, recreational and social uses, while retaining elements within the existing harbour, including inter-island travel facilities, a hub for private boat owners and associated marine leisure services, transit arrangements for cruise passengers, and the island's fishing fleet. Such re-purposing might promote and enhance the iconic status of St Peter Port.

3.6 The need for a long term solution for importing liquid fuel, to resolve current safety and security issues at St Sampson's Harbour, is also inextricably linked to

[3] St Peter Port Harbour Development. Billet d'État VIII of 2019, Article 6.

any consideration of future harbour development. Options for this were already being considered through a separate programme being led by the Committee *for the* Environment & Infrastructure, potentially involving the creation of new port facilities. Such repurposing of St Sampson's Harbour would also offer the potential to significantly enhance the whole environs of The Bridge at St Sampson's/Vale.

3.7 Following a successful amendment[4], the States agreed that the development proposed by the Requête may bring significant benefits, but it should be considered in a much broader context than that proposed in the original Requête. Any development scheme should be informed by a thorough appraisal of the island's future harbour requirements, including those provisions currently located at St Sampson's. It should also take account of other potential benefits, such as the wider development opportunities along the island's east coast, being considered through the Seafront Enhancement Area (SEA) programme.

3.8 The States' Trading Supervisory Board (STSB) was directed "to carry out a detailed analysis of the future harbour requirements, including consideration of any requirement for new berth facilities east of the QEII Marina or nearer to St Sampson's Harbour; and an assessment of the impacts, practicalities, and potential benefits of relocating some commercial port operations away from St Peter Port." To facilitate this, the STSB established a Commercial Ports Investigation Board (Programme Board) chaired by one of STSB's non-States Members, to provide oversight and governance of the project.

3.9 This policy letter details the subsequent conclusion from that analysis of future harbour requirements and potential options to meet these requirements and presents information of detail and complexity, building upon a number of previous studies. It offers an opportunity to decide on a strategic direction for the future of our harbours, which could have major, wide-reaching benefits for future generations.

3.10 It is important to note that the potential port designs presented in this policy letter are provided solely for illustrative purposes. The focus at this stage is to determine the future requirements, and to identify the likely preferred location and scale of any new port development. The specific design and location of work associated with the preferred option will be worked up in detail and might change at a later stage.

3.11 The May 2019 Resolutions also directed the STSB "to carry out a detailed Environmental Impact Assessment [EIA] on potential land reclamation and future development east of the QEII Marina… to help inform the preparation of the local development strategy for the St. Peter Port Harbour Action Area". That work is underway, as a separate work stream, but some survey elements have been

[4] Amendment 1. Billet d'État VIII of 2019, Article 6.

delayed due to the Covid-19 related travel restrictions in 2020 and 2021 which prevented the required equipment and experts coming to the island. The full EIA is now scheduled to be completed in Q4 this year.

4 Interrelated Work Streams and Policy Context

Government Work Plan

4.1 The Government Work Plan – Stage 1 prioritises emerging strategic recovery actions. A prioritised action is to "Upgrade air and sea links infrastructure", to which the Propositions set out in this policy letter are directly aligned.

4.2 In respect of the Government Work Plan the following outcomes are relevant to the Future Harbour Development programme:

- Cultivate our local arts, culture and heritage (through the sensitive development of the east coast of St Peter Port, and or the Harbour at St Sampson's – with opportunity to provide enhanced areas of public amenity, opportunity for re-purposing existing harbours etc);

- Inclusive and sustainable economic growth and greater productivity (enabling changes to current methodology of import and export – including potential for increased shipments of bulk goods);

- Resilient and sustainable infrastructure and connectivity (securing lifeline sea connectivity through investment in aging port infrastructure).

Marine Economy Supporting Plan

4.3 The Government Work Plan has also identified the development of a Marine Economy Supporting Plan (MESP) as an important element for sustainable economic recovery and to realise future economic potential. Many activities such as commercial fishing, renewable energy, tourism, recreation, aquaculture and shipping all contribute towards this diverse marine-based economy (sometimes referred to as the 'Blue Economy') and need to be properly managed to ensure the benefits are lasting and sustainable.

4.4 Guernsey's marine assets offer significant economic opportunity and potential for growth and diversification. However, these must be developed sustainably, as promoting short-term growth without balancing natural capital value results in long-term economic disadvantage. It is essential that such opportunities are balanced against the risks to our marine environment and natural resources if we are to realise the potential for our waters to provide sustainable resources, jobs and wider economic benefits without compromising its benefits and services for future generations.

4.5 Once developed, marine (economic and spatial) planning will help the strategic planning work necessary to guide the right development to the right places, while safeguarding our marine and coastal environment. The Future Harbour Development work is of such strategic importance that the outcome of this work will provide key information to the MESP, in terms of the location of a future port and the spatial requirements in terms of harbour operations.

4.6 The development of the MESP will fall to the Committee *for the* Environment & Infrastructure. Once completed, it will provide an effective framework to ensure the co-ordination of policy to enable delivery of multiple economic opportunities and to achieve a cohesive and sustainable marine economy. It will provide the data, tools and confidence to build a sustainable Blue Economy.

4.7 The MESP will include a 'marine economy plan', which identifies and facilitates economic opportunities; a detailed 'marine spatial plan', which provides a framework for the co-ordination of policy; and a 'marine natural capital atlas', which will provide a spatial perspective and quantitative valuation of Guernsey's natural marine assets and the benefits and services that they provide. Together, these will ensure future co-ordination of the sustainable delivery of major infrastructure, development projects and economic opportunities, whilst ensuring that resilience is built into our marine environment, and that it is protected.

4.8 A sustainable MESP will be developed over at least three years and as it develops it will both provide information and data to underpin and give weight and value to the Future Harbour Development and SEA work, including those elements that are not directly related to purely functional requirements. Importantly, it will also benefit from information and data gathered as part of the Future Harbour Development work, such as the outcomes of further surveys, including for the current EIA for land reclamation east of the QEII Marina. The progression of the Future Harbour Development, SEA and MESP work streams will be carried forward in full harmony as each of the three areas of activity develop.

Seafront Enhancement/Harbour Action Areas

4.9 The work of the Future Harbour Development is intrinsically linked to the SEA programme. In many respects, the outcome of this policy letter will form the keystone of the SEA work, which cannot effectively progress a strategic development of the east coast of Guernsey without first being directed by the Assembly on the location and functionality of our ports. The importance of the direction that this policy letter can provide to the SEA work cannot be overestimated.

4.10 It is because of this parallel SEA programme that full financial or socio-economic appraisal of the options for port development put forward in this policy letter,

cannot be meaningfully undertaken at this stage. It is unknown how either released space within St Peter Port or St Sampson's Harbours or new space created as a result of any new port development at any location will be utilised and which of the 'statements of intent' defined by SEA[5] could be delivered.

4.11 Seafront enhancement has been identified as a States priority and relates specifically to the development and coordination of policies for the Eastern Seaboard, including development of a Local Planning Brief for the Harbour Action Areas by the Development & Planning Authority at both St Peter Port and St Sampson's Harbour. This policy framework could then secure significant inward investment and promote wider economic, social and environmental objectives, while retaining and enhancing any unique aesthetic, cultural or heritage importance.

Guernsey Hydrocarbon Supply Programme

4.12 In May, 2020 the States agreed a new Energy Policy for the island. One of the resolutions[6] was to agree the separation of the hydrocarbon programme into three work streams:

a) Energy Policy and Climate Change policy (the Committee *for the* Environment & Infrastructure);

b) The STSB's Future Ports Development Programme, which will be informed by the Energy Policy and, in particular, will take into account the delivery of hydrocarbons by ship as part of any investigation of future harbour requirements; and

c) A support programme working with energy providers for interim supply solutions.

4.13 Thinking and research in terms of energy production and consumption, as well as changes in consumer behaviours and the political direction of travel of our closest neighbours has meant that the programme of work that began life as "Deep Water Berth Investigations" in 2013 has turned into a much more complex and multi-faceted task.

4.14 The requirement has moved on from a simple review of a replacement for the current import facilities at St Sampson's Harbour to a review of the Hydrocarbon Supply Chain. The programme of work to investigate supply of hydrocarbons to the Island has been underway since November 2016. This programme of work has carried out a number of studies and has provided pivotal information on

[5] https://gov.gg/seafrontenhancement

[6] States of Guernsey Energy Policy 2020-2050. Article VIII of Billet d'État No. XI of 2020, Resolution 10.

future requirements which can now be viewed in the context of the energy policy and current programmes of work within the States.

4.15 With this in mind, the hydrocarbon supply chain requirements are a combination of:

- Policy and strategy adoption and implementation. This includes approval of energy policy and climate change policy followed by the implementation of actions associated with those policies.
- Changes to port infrastructure significantly dependent on decisions within the STSB Future Harbour Development Programme (this policy letter); and
- Interim support for issues related to hydrocarbon supply continuity in the short term.

4.16 It was also agreed that the hydrocarbon programme is subsumed into energy policy and the STSB Future Harbour Development Programme in order to consider port infrastructure for the delivery of hydrocarbons, with a third strand of work established to work with energy providers and align decisions for interim supply solutions.

4.17 As was recognised in the report attached to the Harbours Requête amendment, the importation of fuel to the island and future hydrocarbon demand is also linked closely with this work. The Guernsey Hydrocarbon Supply Programme assesses the various components of the supply chain to Guernsey, examining factors such as demand, risk and lifetime costs. This programme has yet to reach a firm conclusion, however it is understood that three options for the future delivery of hydrocarbons to the island feature highly in the appraisals undertaken to date. These are:

- Upload at an always afloat multi use berth;
- Upload at a new always afloat terminal comprising a Multi Buoy Mooring (MBM) for clean fuel and another for Liquid Petroleum Gas (LPG), located just offshore;
- The use of unitised ISO container imports for upload at LoLo and RoRo facilities[7].

These have all been included within the harbour requirements study as possible options.

[7] https://gov.gg/fuels

4.18 It is important to recognise that the Future Harbour Requirements (FHR) work stream does not seek to resolve the hydrocarbon programme, but rather to accommodate the likely preferred options for future fuel importation, which are set against a backdrop of diminishing demand.

Planning Policy

4.19 Any development proposals, including those arising from States' decisions, must be consistent with States approved land use policies as set out in the Island Development Plan (IDP)[8] and be considered against other material planning considerations under planning law. The IDP would allow land reclamation to provide ports and harbour infrastructure to be considered as Development of Strategic Importance[9]. Under this policy, the nature and scale of such a development would require a Local Planning Brief which, once approved by the States, would become an addition to the IDP. A Local Planning Brief has effect for 10 years subject to further extension by resolution of the States and may be further amended during that 10 year period. The requirements for that are likely to include a full EIA, for the area concerned and any proposed policies, and it would also need to be considered at a full independent planning inquiry[10], before being presented to the States. An independent planning inspector is legally required to consider whether policy proposals are appropriate, based on robust and credible evidence, and having considered relevant alternatives. The policy for Development of Strategic Importance in the IDP also requires that it is demonstrated the proposals represent the best practicable option taking into account all relevant economic, social and environmental considerations. For this reason a comprehensive site selection study will be needed to demonstrate this.

4.20 Land use policies relevant to the Main Centres and Main Centre Outer Areas, as well as those relating to Development of Strategic Importance and Strategic Opportunity Sites would allow for a range of uses of any reclaimed land at Longue Hougue South or St Peter Port. However a Local Planning Brief can set additional policy for a particular site or area and may affect the application of other IDP policies but needs to take into account the guidance and directions given by the SLUP and must be consistent with it and conform with the Principal Aim and Plan Objectives of the IDP[11].

4.21 From a planning perspective, seafront enhancement potential will be unlocked through the preparation of a strategic plan for the east coast which will in turn inform Local Planning Briefs for the two Harbour Action Areas at St Peter Port

[8] This is subject to a special procedure for strategically essential development but that has not been used to date.
[9] Policy S5.
[10] Sections 6 and 7 of The Land Planning and Development (Plans) Ordinance, 2007.
[11] Section 10 of the Land Planning and Development (Guernsey) Law, 2005.

and St Sampson's, which will facilitate comprehensive, co-ordinated and effective delivery. The resolutions following the May 2019 Requête provided resources to prepare a Local Planning Brief for the St Peter Port Harbour Action Area, with a view to facilitating positive development in this area in as timely a way as possible once the strategic plan for the east coast is agreed. This extant resolution is still applicable. Whilst the May 2019 Requête did not specifically refer to the immediate development of a Local Planning Brief for the St Sampson's Harbour Action Area, it recognised the necessity for a coordinated approach to development for the whole of the east coast.

5 Future Harbour Requirements Study 2020

Current Facilities and Operations

5.1 The two main harbours cater for different port requirements, and together facilitate all of the essential demands on those facilities. There are however, limitations and constraints identified elsewhere within this policy letter, which if unaddressed will increasingly impact upon the operation of the harbours.

5.2 St Sampson's deals mainly with what are termed bulk cargoes. These are commodities being transported in very large volumes, typically by specially arranged shipments. This applies to the importation of liquid fuels, aggregates, cement and other construction materials, as well as export of scrap metal.

5.3 St Peter Port handles most other incoming and outgoing freight, as well as passengers. Cargoes are generally transported in smaller volumes using scheduled services (generally daily), either on articulated trailers – known as roll-on, roll-off (RoRo) – or in shipping containers or on pallets to be loaded and unloaded by crane – known as lift-on, lift-off (LoLo). St Peter Port Harbour is also home to the island's commercial fishing fleet.

5.4 RoRo vessels tend to have a combination of freight and passenger traffic (also known as RoPax), while LoLo is more specifically freight.

5.5 St Peter Port Harbour can accept cargo vessels of up to 140 metres, and St Sampson's Harbour up to 80 metres.

5.6 Both ports also provide marina facilities for local boats and, in the case of St Peter Port, visiting yachts. Similarly, the majority of the moorings are tidally restricted, and current provisions are generally not ideally suited to larger private vessels (i.e. vessels in excess of 24m in length), which can often be referred to as superyachts. While Guernsey itself offers many attractions, it is acknowledged that the welfare facilities provided for visiting yacht and leisure vessels are not of the highest standard. The current mooring and berth facilities provided at St Peter Port and St Sampson's Harbours are listed in Table 1.

Table 1: Mooring and berth facilities

St Peter Port Harbour	
Berths	
• RoRo ramps	- Maximum vessel length 140m, 6m draft
• Afloat berths (4, 5, 6)	- Maximum vessel length 94m, 3m draft
• Drying berths (7, 8, 9)	- Maximum vessel length 90m
• Cross Berth	- Maximum vessel length 40m, 4m draft
• Inter-Island Quay	- 80m in length
Moorings	
• Albert Marina	- 315 moorings
• QEII Marina	- 766 moorings + 11 drying moorings
• Other (e.g. the Pool, Fish Quay, Swan Pontoons)	- 253 moorings.
St Sampson's Harbour	
Berths	
• Drying berths (1N, 2N)	- Maximum vessel length 80m
• Drying berths (1, 2, 3, 4S)	- Maximum vessel length 80m
Moorings	
• Outer marina	- 211 moorings + 11 drying moorings
• Inner Marina	- 118 moorings

5.7 Both harbours also have significant operational issues which have been highlighted in various reviews over the past 30 years.

5.8 For St Sampson's Harbour, this is predominantly the risk associated with the import and handling of flammable cargoes in close proximity to businesses and houses. This problem is exacerbated by the harbour 'drying out' at low tide which, if a major incident were to occur on a vessel, would preclude it from being towed away from the area to limit the impacts of an uncontrolled fire on board.

5.9 Tidal flows and restrictions along with navigational challenges make operation into St Sampson's particularly challenging. The same tidal restrictions mean freight vessels can only access the port on certain states of tide, and the vessels have to be constructed to safely rest on the seabed.

5.10 In St Peter Port, the main issues relate to the conflicts between the commercial port operations and leisure users. These pressures around security, safety and

efficiency exist both on land and on sea, and are exacerbated by the current layout of facilities and competing demands for limited sea and land space within the existing Harbour.

5.11 The resulting pressure on space, and port operations more generally, also impacts on the adjacent areas and other activity around St Peter Port. For instance, commercial traffic accessing the port adds to congestion in and around the seafront, and encroachment over time into the North Beach car park which has had to be increasingly allocated for harbour use, at the expense of public parking.

5.12 Previous reviews of harbour requirements have looked at various potential options for resolving these conflicts. They include possible development of a new fuel import facility outside of St Sampson's Harbour, which is currently being considered under the Guernsey Hydrocarbon Supply Programme. Although that is a separate programme, some of the key outputs from that work have helped inform the current review, including adopting the forecasts of future demand and potential alternative import solutions that are built into this study and await direction from the GHSP.

5.13 Other options from previous reviews identified reconfiguration of the current facilities at St Peter Port, around the North Beach area, or co-locating some of the existing activities, alongside a future solution for importing liquid fuels.

5.14 In addition to the operational issues, both ports have suffered a lack of investment in infrastructure and thus the condition of the harbour assets is significantly deteriorating and requires substantive investment. In 2018, a non-intrusive marine asset condition survey identified significant investment requirements as well as the need for more studies to assess in detail the condition of certain areas of our ports. With the addition of other capital investment demands, current estimates indicate a required investment of circa £35 million in the short to medium term at the harbours. There is a commitment on the part of Guernsey Ports to undertake this investment irrespective of what other development may be progressed.

Future Harbour Requirements

5.15 Following approval of the Requête in May 2019, the STSB established a Programme Board to manage the response to the States' direction. STSB commissioned Jacobs U.K. Limited (Jacobs) to carry out a detailed Future Harbour Requirements Study (FHRS 2020). The firm has extensive experience in ports development, having worked on numerous marine projects worldwide. It is also familiar with Guernsey's harbour infrastructure, with a number of its team having carried out a similar study, in 2010, prior to the renovation of the freight facilities at St Peter Port and replacement of the main harbour cranes. Most

recently, the firm was providing specialist advice on the development of options for future hydrocarbon fuel supply, as part of a separate programme.

5.16 The aim of the review was to identify the likely requirements for Guernsey Harbours for the foreseeable future, both for commercial and leisure sectors, and provide potential options for how these requirements could be met through existing infrastructure and, potentially, new development.

5.17 Jacobs began by inviting port users to a series of workshop meetings. The purpose of these meetings was to fully understand the needs of existing users, establish their views on the current facilities and operations, and identify any present or future trends across all the various sectors. Participants were also invited to provide information on current usage of the ports, particularly where Guernsey Harbours' own records did not provide sufficient detail.

5.18 Forty-six different organisations took part, including the main freight vessel operators and freight handling agents, hauliers, fuel companies, inter-island ferry operators, the local yacht clubs, providers of leisure marine services, St Peter Port Harbour tenants (including hospitality and retail), and representatives of the commercial fishing sector.

5.19 Feedback from these meetings and analysis of existing harbour data was then used to estimate the anticipated future demand, for the next 30 years. This used different assumptions to provide base, low and high forecasts for each sector.

5.20 The findings of this initial demand study were then used to identify the spatial requirements for the harbours. In other words, the space required to carry out each of the various functions in a safe and efficient manner, and in accordance with relevant regulatory requirements, and meet forecast demand. That included a review of the lengths and number of berths needed for unloading cargo, to the land-based requirements for handling of freight and for marshalling incoming and outgoing vehicles and trailers.

5.21 The demand forecasts typically showed static demand or decline in demand over the forecast periods, except under the high scenarios, in which demand increased in many sectors. The spatial and facilities requirements assessment showed that the space currently occupied by each sector was typically sufficient for current needs, but additional landside space was required by some sectors as illustrated in Table 2.

Table 2: Jacobs demand forecast and additional spatial requirements.

	Historic trend/ current demand		2050 demand forecast		Additional facilities required[12]
	2008-19	**2019**	**Low**	**High**	
LoLo/RoRo cargo[13] (tonnes)	↓ 0.8%	200,000	193,100	303,000	+3,000m^2 landside LoLo +1,600m^2 landside RoRo
Bulk fuels (tonnes)	↓ 2.5%	75,000	42,000	69,300	New terminal & storage facility location or convert to unitised cargo
Bulk solid cargo[14] (tonnes)	↓ 6.2%	41,000	0	135,000	No further requirements
International passenger traffic	↓ 0.6%	288,000	236,000	528,000	+300m^2 passenger terminal, +1,000m^2 parking, 15m berth extension
Private & small commercial vehicles	↓ 0.5%	95,000	84,000	157,000	+1,650m^2 landside
Car import and export[15]	↓ 7.5%	3,570	1740	5,020	No further requirements
Inter-island passengers	↑ 1.1%	137,000	100,000	183,000	No further requirements
Inter-island freight (tonnes)	↑ 0.5%	9,800	7,170	19,950	No further requirements
Visiting yachts	↓ 2.3%	8,800	6,500	14,300	2 x shower/toilet blocks
Local yachts[16]	↑ 0.7%	1,767	646	2,110	+32,000m^2 +343 berths
Super yachts	↑ 33%	29	6	70	90m berth, 4.5m deep; 90m^2 fuelling area
Fishing & charter vessels	↓ 2.6%	120	46	149	+1,650m^2 marine area for +29 berths
Cruise[17]	↑ 0.4%	116,000	95,000	286,000	50m tender berth extension

[12] Additional facilities required to meet 2050 high demand forecast
[13] High forecast assumes bulk liquid cargo transfers to unitised
[14] Low forecast assumes demand is met by unitised cargo rather than bulk cargo
[15] Low forecast assumes new cars imported directly by end customer and recognised car parc (all registered vehicles within a defined area of registration) has longer life, so vehicle turnover is slower
[16] Low forecast assumes same rate of decline in local yachts as recent trend (2016-19)
[17] Initial estimate of recovery post COVID-19

5.22 Jacobs then considered potential locations, outline designs and layouts for port facilities that may be able to meet the anticipated spatial requirements for the various port activities.

5.23 This resulted in a substantial long-list of possible scenarios. Each one represented a blend of locations for different port activities, which included 'Do Nothing' options for both harbours. The object of the exercise was not to assess the feasibility of each scenario, or to rank them, but simply to identify the full range of possibilities.

5.24 This initial long-list was then evaluated against various criteria, to assess how well each scenario would meet current requirements and projected future demand, under both base and high assumption forecasts. This evaluation also considered safety and reliability, and the potential to phase development.

5.25 Over a series of evaluations the long list was reduced to an initial short-list of 15 potential options, representing the most practical and beneficial options for each sector and location. These are set out in Table 3.

5.26 Full details of the initial options development, and the subsequent assessment and short-listing of scenarios can be found in the 2020 Future Harbour Requirements Study report (appended).

6 Carried Forward Options

6.1 The short-listed options from the Jacobs' study broadly comprise:

- Basic refurbishment of the existing infrastructure at both harbours;
- Reconfigure port facilities, within the existing harbours and adjacent land;
- Construct completely new port developments, in new locations;
- Release of land to improve provision for the leisure marine sector;
- Combinations of the above.

6.2 Jacobs provided cost estimates for each of the short-listed options. At this stage, these are very high level, and in accordance with the HM Treasury Green Book[18] a 66% optimism bias adjustment[19] has been included.

[18] HM Treasury Green Book: Central Government Guidance on Appraisal and Evaluation.
[19] 'Optimism bias' is a method of allowing for the tendency for project estimates, including capital costs, to be overly optimistic at early stages of a project. The Green Book recommends applying a percentage adjustment, which reduces as the project progresses and parameters and costs become more developed.

Table 3: Options put forward in the Future Harbour Requirements Study 2020.

	Option	General description
Do Nothing	0.1	Do Nothing at St Peter Port Harbour
	0.2	Do Nothing at St Sampson's Harbour
Do Minimum at St Peter Port Harbour for commercial activities	1.1	Minimum changes at St Peter Port Harbour to meet requirements
	1.2	Optimised St Peter Port Harbour layout to meet requirements and improve efficiency and security
	1.3	Alternative St Peter Port Harbour layout to meet requirements and improve efficiency and security
Move St Peter Port Harbour commercial activities to new facility East of QEII Marina	2.1	East of QEII Marina no dredging
	2.2	East of QEII Marina most compact layout
New Port for commercial sectors adjoining Longue Hougue South	3.1	Most commercial sectors to new port adjoining Longue Hougue South
	3.2	LoLo and bulk to new port adjoining Longue Hougue South
Provide new cruise facilities	4.1	Cruise berth East of QEII Marina
	4.2	Additional cruise tender berth
Address future requirements for leisure facilities	5.1	New St Peter Port Harbour breakwater and marina with extended St Sampson's marina
	5.2	New breakwater, fish quay and marinas in St Peter Port harbour
	5.3	New breakwaters and marinas in St Peter Port Harbour with repurposed commercial berths
Repurpose Havelet Bay	6.1	Havelet Bay Marina

6.3 For options that involve reconfiguring the existing harbour or the development of a new port, the cost estimates include all the elements required to meet the needs identified in the spatial requirements study. For instance, additional landside space for storage of LoLo and RoRo trailers, and a new terminal and associated facilities for international passengers (UK and France).

6.4 In the case of the 'Do Minimum' options (Options 1.1, 1.2 and 1.3 outlined in Table 3) the requirements for additional space would be accommodated by using a section of the existing North Beach car park. These cost estimates therefore include provision of a multi-storey car park to offset any loss of parking (and potentially enable the relocation of parking from other areas of St Peter Port, such as the piers).

Process of Option Refinement

6.5 Most of these short-listed options only represent a partial solution, to address one or more harbour requirements. By combining different complementary elements, a number of more comprehensive solutions emerge.

6.6 To assess the 'impacts, practicalities, and potential benefits of relocating some commercial activities', various scoring criteria were developed (see paragraphs 7.5 to 7.14). However, to simplify the scoring process, the project team first rationalised the short-list of options in conjunction with the Harbour Operations Team.

- Reconfiguration options for St Peter Port Harbour (Options 1.1, 1.2, and 1.3) would essentially deliver a similar solution and benefits, however with varying degrees of operational efficiency. After assessment by the Harbour Operations Team, it was decided to only take Option 1.3 through to evaluation, as the optimal arrangement.

- Likewise Options 2.1 and 2.2 would essentially deliver a similar solution and benefits through a new development in St Peter Port. It was therefore decided to only take Option 2.1 through to evaluation. This would avoid the need for extensive rock excavation, and provide for easier navigation.

- Options 3.1 and 3.2, for a new port development closer to St Sampson's Harbour, are materially different, in terms of the operations that would be located there, and which are retained in St Peter Port. They therefore represent different solutions and/or benefits, so both were retained for evaluation.

- Option 4.1 for a new deep water cruise ship berth was discounted on the basis that the anticipated investment required did not make economic sense, taking into account the pre-2020 cruise passenger figures. Previous consultation with the cruise industry has highlighted that operators are not willing to pay an increased passenger landing duty for any new facility.

- The Ports Master Plan (PMP), published in 2013, reached the same conclusion. That estimated an order of magnitude cost for a dedicated cruise liner berth as "at least £183 million", and said this could not be justified based on financial revenues or economic benefits. Jacobs have provided a more recent cost estimate for a dedicated cruise berth for a single ship, of circa

£239 million. In addition, the impacts on the cruise industry of Covid-19 and Brexit are as yet unknown but have clearly had a significant adverse effect in the shorter term.

- However Option 4.2, to improve the current cruise tender facilities, is viable and could be achieved at significantly lower cost (c£2.3m). It could also be combined with any of the options for reconfiguring current port facilities or new development. It was therefore retained. This would greatly improve the overall passenger experience, by allowing more tenders to berth alongside at a time, so reducing queue times and providing better arrangements for embarkation and disembarkation.

- Similarly the options for providing additional facilities for the leisure marine sector – Options 5.1, 5.2, 5.3 and 6.1 – were considered feasible. All could be accommodated within the reconfiguration and would not be considered in detail at this stage, although are presented here for consideration of what could be achieved for the leisure sector. The preferred solution for leisure marine will largely depend on which commercial combination is approved, as each option will have impacts on space availability within St Peter Port or indeed at St Sampson's. The option which best suits all commercial options is Option 5.2.

- Finally the 'Do Nothing' scenarios - Options 0.1 and 0.2 - have been retained as a default position, however they would not meet the future harbour needs, as identified in Jacobs' Study.

6.7 These remaining options were then amalgamated to produce seven "Combinations" of options, or full schemes, which could be evaluated against one another. These are described in Table 4. They provide a range of different potential solutions to meet the island's future harbour requirements, ranging from reconfiguration of the existing harbours to large scale development of new port facilities.

6.8 The location of specific facilities and services within each of these potential Combinations is set out in Table 5 and described in paragraphs 6.12 to 6.26.

6.9 The estimates for the short-listed options in the FHRS 2020 study have been used to provide a provisional cost estimate for each Combination. These are also set out in Table 5.

6.10 These do not include estimated costs for providing additional facilities for the leisure marine sector (Options 5.1, 5.2, 5.3 and 6.1). Those are considered complementary to any of the options for reconfiguration or new port development, but would need to be considered on their own merit, based on a business case. However they could be included in any of the short-listed Combinations, and as such would not have any bearing on the evaluation scoring.

Table 4: Short-listed Combinations

Title	Brief Descriptor
1. Minimal Change	Improve the leisure offering in St Peter Port and carry out essential repairs to the current harbours.
2. Reconfigure St Peter Port Harbour	Reconfigure operations in St Peter Port within the White Rock and North Beach areas. Improve the leisure offering in St Peter Port and carry out essential repairs to the current harbours.
3. Extend St Peter Port Harbour eastwards	Construct a new port east of the QEII Marina, primarily for international passengers and unitised freight, freeing up space within the existing St Peter Port harbour. Improve the leisure offering in St Peter Port and carry out essential repairs to the current harbours.
4. Extend St Peter Port Harbour eastwards and construct a new bulk fuel import facility	Construct a new port east of the QEII Marina, primarily for international passengers, unitised and bulk solid freight cargo. Construct a new bulk fuel import facility in the north if required, freeing up space within both existing harbours. Convert St Sampson's to leisure only. Improve the leisure sector offering in St Peter Port and carry out essential repairs to the current harbours.
5. Construct a new northern port for some freight and fuel	Reconfigure operations in St Peter Port, within the White Rock and North Beach areas. Construct a new northern port primarily for unitised, bulk and liquid (fuel) freight, freeing up space within both existing harbours. Convert St Sampson's to leisure only. Improve the leisure sector offering in St Peter Port and carry out essential repairs to the current harbours.
6. Construct a new northern port for all freight, fuel and international passengers	Construct a new northern port, primarily for international passengers, trailered, unitised, bulk and liquid (fuel) freight, freeing up space within both existing harbours. Convert St Sampson's to leisure only. Improve the leisure sector offering in St Peter Port and carry out essential repairs to the current harbours.
7. Extend St Peter Port Harbour eastwards and construct a new northern port for some freight and fuel	Construct a new port east of the QEII Marina, primarily for international passengers and unitised freight, construct a new northern port for unitised, bulk and liquid freight, freeing up space within both existing harbours. Convert St Sampson's to leisure only. Improve the leisure sector offering in St Peter Port and carry out essential repairs to the current harbours.

6.11 For illustrative purposes, Figure 1 shows the potential development locations on a site plan to indicate the scale of the proposals.

Figure 1: Site location and scale plan showing potential development locations.

Common features across all Combinations

6.12 The identified combinations represent distinctly different solutions to the island's harbour requirements. However they all share some common features.

- Irrespective of where any new facilities may be located, the current maintenance requirements for the existing harbours infrastructure (as described in paragraph 5.14) will be addressed in each combination.

- The existing cruise liner tender berth at St Peter Port Harbour can be extended within any of the combinations, to allow more tenders to berth alongside at any one time, to provide a better passenger experience, with shorter queue times and improved arrangements for embarkation and disembarkation.

- If sufficient return can be demonstrated, all combinations have the option to create additional facilities for marine leisure within St Peter Port inner harbour and/or Havelet Bay. This would provide some capacity for the increasing trend toward larger private boats. Such development would be subject to a satisfactory business case.

6.13 In addition, with the exception of Combination 1 (Minimal Change), all combinations share the following common features.

- A new warehouse, workshop, stores and offices for the Ports Operational Team would be provided, releasing the Cambridge Berth area (where they are currently located) for potential development.

- A new passenger terminal and new Guernsey Border Agency (GBA) control point would be constructed, to provide improved facilities, greater security and better disembarkation arrangements for vehicles as they pass through border control.

Combination 1: Minimal Change

6.14 This solution could be described as 'business as usual' without major construction. Investment will instead largely focus on repairing the current deficiencies at the harbours. It is assumed liquid fuel import would continue to be from a tanker berthed 'alongside' at St Sampson's Harbour[20]. Alternatively, it could be imported using ISO tank containers, through St Peter Port Harbour, or via a new always afloat mooring buoy solution outside of St Sampson's Harbour.

[20] The current practice may have a limited life due to vessel availability and continuing tolerance of 'NAABSA' (Not Always Afloat But Safety Aground) practices.

Estimated cost (excl. provision of additional leisure facilities) - £37 million

- Repairs to current harbours - £35m
- Cruise pontoon extension - £2m

Combination 2: Reconfigure St Peter Port Harbour

6.15 This combination focuses on changes primarily within St Peter Port, within the current harbour and adjoining land.

- Current port operations around the North Beach and White Rock areas would be reconfigured to reduce conflict on land between commercial and domestic traffic, pedestrians and vehicles.
- The new passenger terminal and GBA checkpoint would be constructed on the North Beach, along with a multi-storey car park, with a below ground level, to replace any spaces lost from the current car park. This could potentially relocate some parking away from other parts of Town.
- It is assumed liquid fuel import would continue to be from a tanker berthed 'alongside' at St Sampson's Harbour[20]. Alternatively, it could be imported using ISO tank containers, through St Peter Port Harbour, or via a new always afloat mooring buoy solution outside of St Sampson's Harbour.

Estimated cost (excl. provision of additional leisure facilities) - £115 million

- Base cost - £53m
- Repairs to current harbours - £35m
- North Beach multi-storey parking - £25m
- Cruise pontoon extension - £2m

6.16 Figure 2 provides an indicative layout of the reconfigured White Rock and North Beach areas, which would be applicable to Combinations 2 and 5.

LEGEND

1. New International Ferry Terminal building at first floor over car marshalling and border control area.
2. Inter Island passenger drop off
3. North Beach Car park 2 lower parking levels added, ground level for public use.
4. Land released for other uses.
5. Guernsey Harbour office and workshop area.
6. Harbour restricted area container and freight marshalling area.
7. Potential leisure marina provision.
8. Additional cruise tender pontoon

Figure 2: Indicative layout showing the reconfiguration of St Peter Port Harbour (applicable to Combinations 2 and 5).

Combination 3: Extend St Peter Port Harbour eastwards

6.17 This combination includes a major development outside the current St Peter Port Harbour, to create extensive new port facilities.

- A new large harbour east of QEII Marina would accommodate both RoRo and LoLo vessels, and provide the location for the new passenger terminal and GBA control point.

- Along with the Cambridge Berth, almost all the New Jetty would be released for potential development. A large area of 'the pool' within St Peter Port Harbour would also be released for other blue economy uses.

- It is assumed liquid fuel import would continue to be from a tanker berthed 'alongside' at St Sampson's Harbour[20]. Alternatively, it could be imported using ISO tank containers, through St Peter Port Harbour, or via a new always afloat mooring buoy solution outside of St Sampson's Harbour.

Estimated cost (excl. provision of additional leisure facilities) - £460 million

- Base cost - £423m
- Repairs to current harbours - £35m
- Cruise pontoon extension - £2m

6.18 Figure 3 provides an indicative layout of the extension of St Peter Port Harbour eastwards, which is applicable to Combinations 3, 4 and 7.

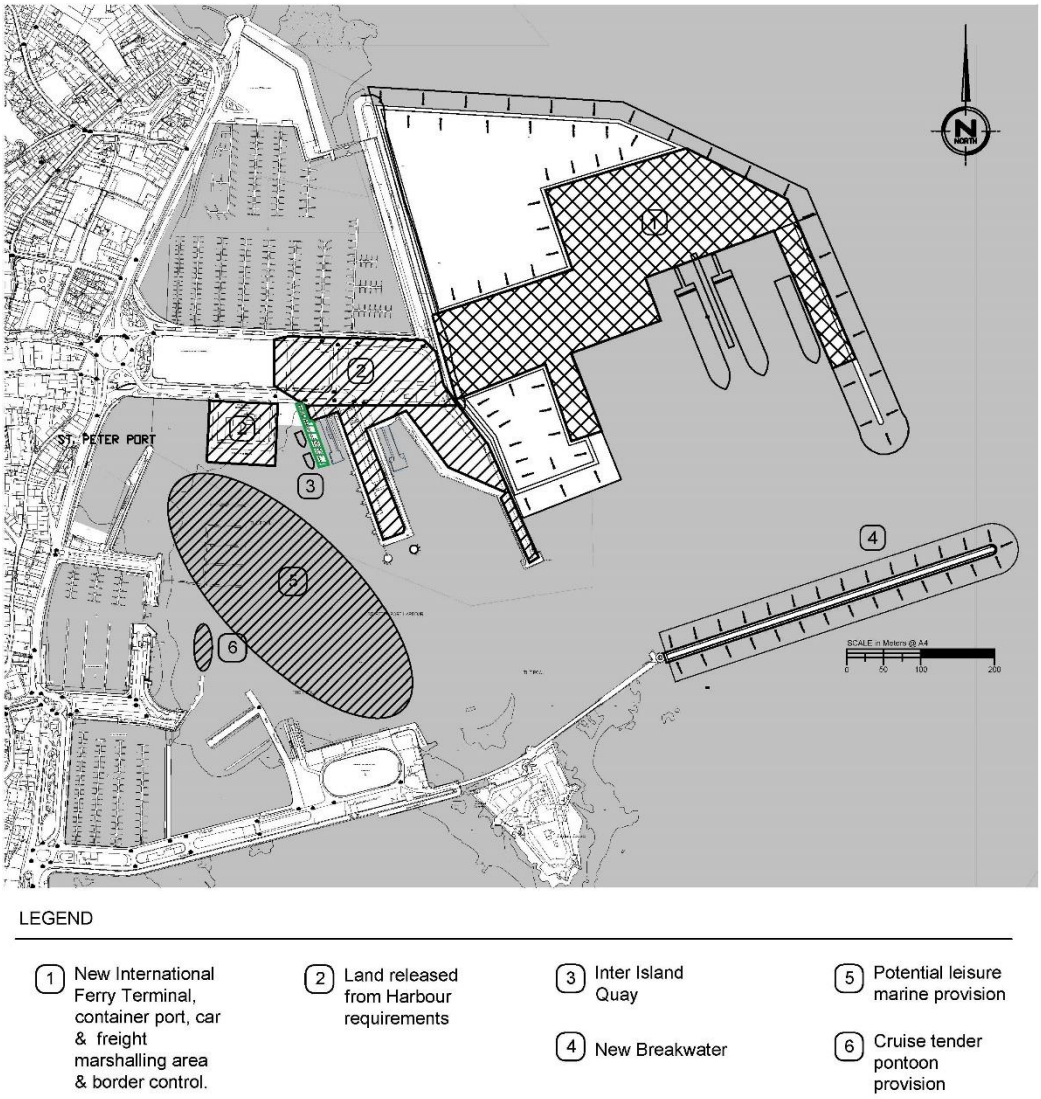


Figure 3: Indicative layout of an extension eastwards of St Peter Port Harbour (applicable to Combinations 3, 4 and 7).

Combination 4: Extend St Peter Port Harbour eastwards and construct a new bulk fuel import facility

6.19 As well as a major development outside the current St Peter Port Harbour, to create extensive new port facilities, this combination would relocate current operations away from St Sampson's Harbour.

- A new harbour east of QEII Marina would accommodate both RoRo and LoLo vessels, as well as bulk freight imports, such as aggregate. This would also be the location for the new passenger terminal and GBA control point.

- Along with the Cambridge Berth, almost all the New Jetty would be released for potential development.

- A large area of 'the pool' within St Peter Port Harbour would also be released for other blue economy uses.

- A new mooring buoy solution for bulk and liquid fuel imports[21] is included, at a location south of Longue Hougue. Alternatively, fuel imports could be via ISO tank delivery, through the new port facilities east of the QEII Marina.

- St Sampson's Harbour would become an extended marina for leisure craft, with land currently used for freight operations also freed for future development.

Estimated cost (excl. provision of additional leisure facilities) - £514 million

- Base cost - £423m
- Repairs to current harbours - £35m
- Multi-Buoy solution - £54m
- Cruise pontoon extension - £2m

6.20 Figure 3, on page 29, provides an indicative layout of the extension of St Peter Port Harbour eastwards.

Combination 5: Construct a new northern port for some freight and fuel

6.21 In this combination, the focus for development is at Longue Hougue South, to create extensive new port facilities, to relocate some activities away from the current harbours.

- Current port operations around the North Beach and White Rock areas would be reconfigured to reduce conflict on land between commercial and domestic traffic, pedestrians and vehicles.

- RoRo (and RoPax) operations would remain at St Peter Port Harbour, along with all passenger services and Bailiwick freight[22]. It would therefore be the location for the new passenger terminal and GBA control point.

- Construction of a new harbour at Longue Hougue South for bulk freight, bulk liquid, and LoLo freight operations would relieve the current harbours of these requirements.

[21] Should heavy fuel oil continue to be required by the Electricity Power Station then a new supply pipe would need to be fitted to the fixed mooring buoy at additional cost.
[22] Excluding LoLo to Alderney.

- St Sampson's Harbour would become an extended marina for leisure craft, with land currently used for freight operations also freed for future development.

- Fuel imports at the new Longue Hougue South facility would be via ISO tank or discharge from tankers berthed alongside[21].

Estimated cost (excl. provision of additional leisure facilities) - £361 million

- Base cost - £299m
- Repairs to current harbours - £35m
- North Beach multi-storey parking - £25m
- Cruise pontoon extension - £2m

6.22 Figure 4 (overleaf) shows an indicative layout of a northern port at Longue Hougue South, applicable to Combinations 5 and 7. Figure 2, on page 27, shows the accompanying changes at St Peter Port Harbour (note that the Restricted Zone would not include containers).

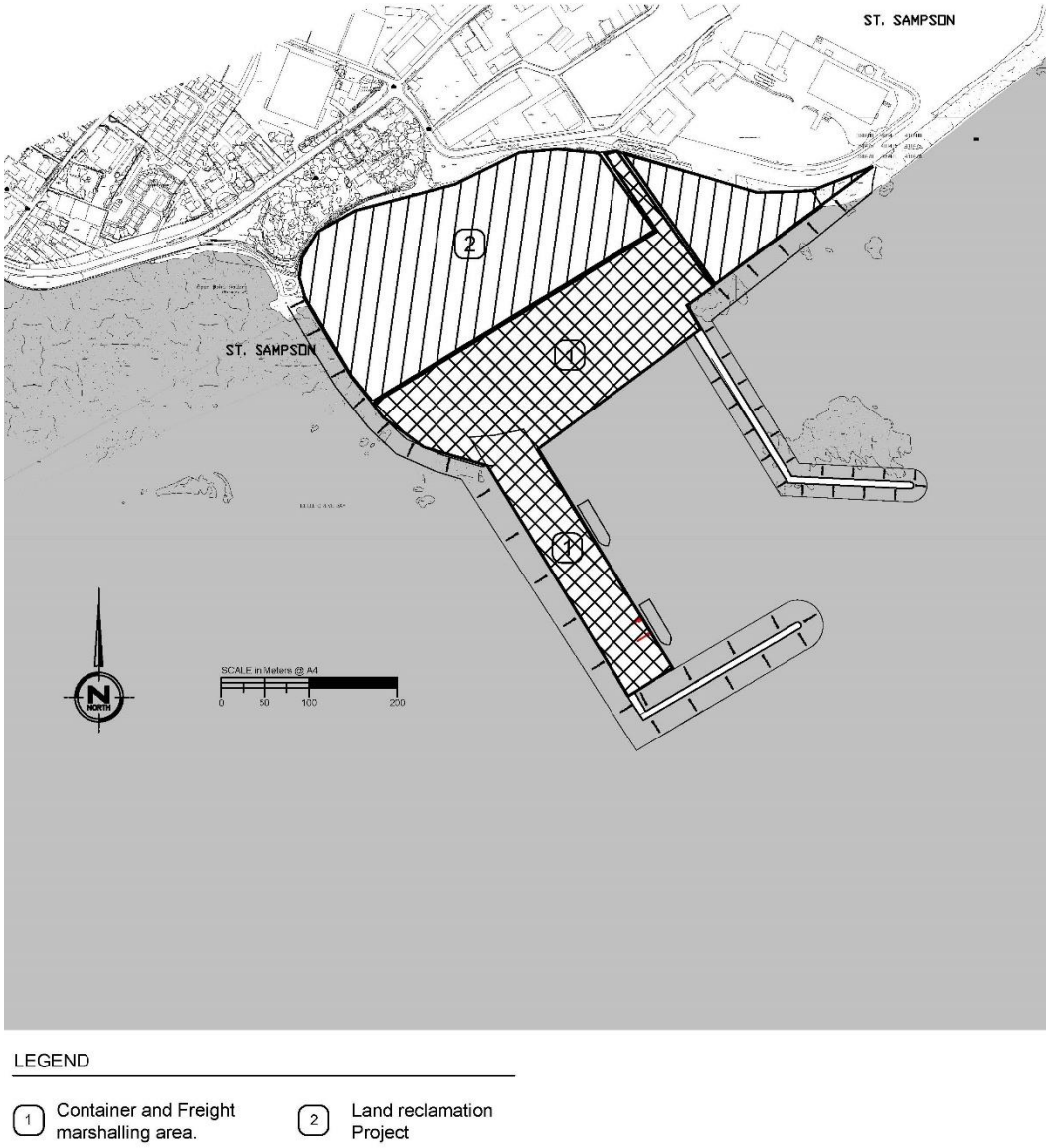


Figure 4: Indicative layout of a new port at Longue Hougue South (applicable to Combinations 5 and 7).

Combination 6: Construct a new northern port for all freight, fuel and international passengers

6.23 In this combination, the focus for development is again at Longue Hougue South, to create extensive new port facilities and relocate almost all commercial freight and international passenger activities away from the current harbours.

- A new, multi-functional harbour at Longue Hougue South would accommodate all RoRo traffic, bulk freight, bulk liquid, and LoLo operations, to relieve the current harbours of these requirements.

- Intra-Bailiwick passenger and freight services would remain at St Peter Port Harbour, but with a new terminal and GBA control point at Longue Hougue South for international passengers.

- Along with the Cambridge Berth, almost all the New Jetty would be released for potential development.

- The reduced commercial activity around the North Beach and White Rock areas would remove the current conflict with domestic traffic and pedestrians.

- A large area of 'the pool' within St Peter Port Harbour would also be released for potential leisure marina provision.

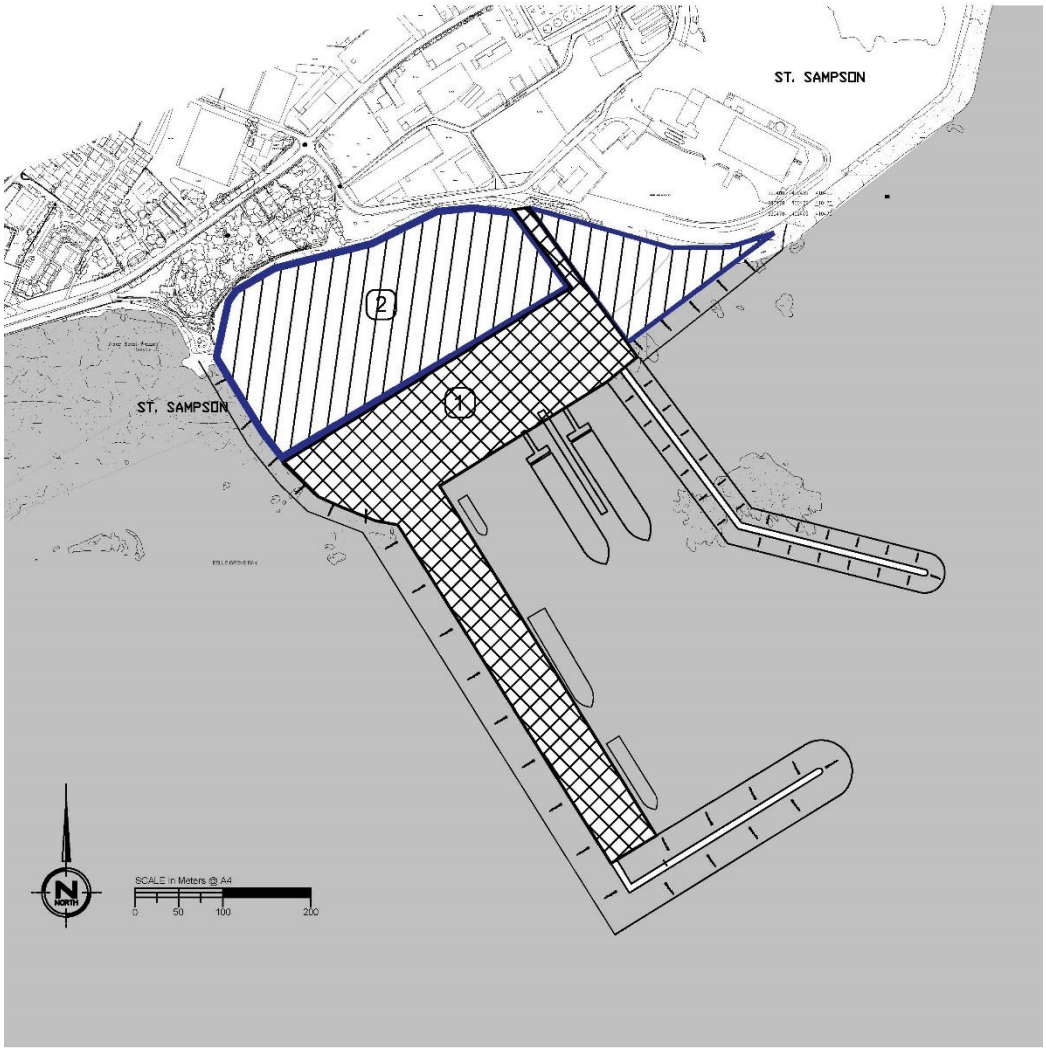
- Fuel imports at the new Longue Hougue South facility would be via ISO tank or discharge from tankers berthed alongside[21].

- St Sampson's Harbour would become an extended marina for leisure craft, with land currently used for freight operations also freed for future development.

<u>Estimated cost (excl. provision of additional leisure facilities) - £354 million</u>

- Base cost - £317m
- Repairs to current harbours - £35m
- Cruise pontoon extension - £2m

6.24 Figure 5 shows an indicative design for a new port at Longue Hougue South for all freight, fuel and international passengers.



LEGEND

1 New International Ferry Terminal, container port, car & freight marshalling area & border control.

2 Land reclamation Project

Figure 5: Indicative layout of a port at Longue Hougue South to accommodate all freight, fuel and international passengers.

Combination 7: Extend St Peter Port Harbour eastwards and construct a new northern port for some freight and fuel

6.25 This combination involves the creation of new port facilities at both St Peter Port and Longue Hougue South, to enable freight operations to be relocated away from the current harbours.

- A newly constructed large harbour east of the QEII Marina will accommodate all RoRo (see Figure 3), as well as the new passenger terminal and GBA control point.

- A new harbour at Longue Hougue South would accommodate all bulk solid, bulk liquid, and all LoLo freight operations (with the possible exception of some inter-island freight). This would relieve both St Peter Port and St Sampson's Harbours of these requirements. See Figure 4 which shows an indicative layout of a northern port at Longue Hougue South.

- Along with the Cambridge Berth, almost all the New Jetty would be released for potential development.

- A large area of 'the pool' within St Peter Port Harbour would also be released for other blue economy uses.

- St Sampson's Harbour would become an extended marina for leisure craft, with land currently used for freight operations also freed for future development.

- Fuel imports at the new Longue Hougue South facility could be via ISO tank or discharge from tankers berthed alongside[21].

<u>Estimated cost (excl. provision of additional leisure facilities) - £706 million</u>

- Base cost - £669m
- Repairs to current harbours - £35m
- Cruise pontoon extension - £2m

6.26 Figure 4, on page 32, shows an indicative layout of a northern port at Longue Hougue South, applicable to Combinations 5 and 7. Figure 3, on page 29, provides an indicative layout of the extension of St Peter Port Harbour eastwards, which is applicable to Combinations 3, 4 and 7.

Summary of combinations

6.27 Table 5 provides a summary of the anticipated locations of the various port operations for each combination. This also provides a rough order of magnitude for capital costs, provided from the Jacobs study, excluding provision of additional leisure facilities.

Table 5: Summary of combinations

	Bulk Liquid	Bulk Solids	LoLo[23]	RoRo & RoPax	International pax.	Herm/Sark freight	Local leisure	Visitor leisure	Bailiwick pax.	Fishing fleet	12 and Under
1. Minimal Change											
Estimated cost: £37m	SS	SS	SPP	SPP	SPP	SPP	SPP SS	SPP	SPP	SPP	SPP
2. Reconfigure St Peter Port Harbour											
Estimated cost: £115m	SS	SS	SPP	SPP	SPP	SPP	SPP SS	SPP	SPP	SPP	SPP
3. Extend St Peter Port Harbour eastwards											
Estimated cost: £460m	SS	SS	EQII	EQII	EQII	SPP	SPP SS	SPP	SPP	SPP	SPP
4. Extend St Peter Port Harbour eastwards & construct a new fuel import facility											
Estimated cost: £514m	MBM	EQII	EQII	EQII	EQII	SPP	SPP SS	SPP	SPP	SPP	SPP
5. Construct a new northern port for some freight & fuel											
Estimated cost: £361m	LHS	LHS	LHS	SPP	SPP	SPP	SPP SS	SPP	SPP	SPP	SPP
6. Construct a new northern port for all freight, fuel & international passengers											
Estimated cost: £354m	LHS	LHS	LHS	LHS	LHS	SPP	SPP SS	SPP	SPP	SPP	SPP
7. Extend St Peter Port Harbour eastwards & construct a new northern port for some freight and fuel											
Estimated cost: £706m	LHS	LHS	LHS	EQII	EQII	SPP	SPP SS	SPP	SPP	SPP	SPP

LHS Longue Hougue South	MBM Multi buoy mooring at LHS	EQII East of QEII	SPP St Peter Port Harbour	SS St Sampson's Harbour

[23] Includes Alderney freight.

6.28 Table 6 below provides a high level comparison of the seven Combinations from the perspective of port operations. This assessment is somewhat subjective, but provides an indicative summary of the merits of each Combination:

- The symbol '✓' indicates where a Combination meets a particular attribute either fully or nearly fully;
- The symbol '✗' indicates an attribute does not apply or is not significantly met;
- The symbol 'P' indicates that an attribute is partly or possibly met.

Table 6: High level summary of attributes applicable to each short-listed combination.

Attribute	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Spatial requirements are met.	✗	✓	✓	✓	✓	✓	✓
Land-based activities are de-conflicted.	✗	✓	✓	✓	✓	✓	✓
Sea based activities are de-conflicted.	✗	✗	✗	✗	P	✓	P
Not tidally restricted for a ferry service.	✓	✓	✓	✓	✓	✗	✓
Not tidally restricted for a freight service.	P	P	P	✓	P	P	P
Restricted Zone at St Peter Port is optimal.	✗	✓	✓	✓	✓	✓	✓
Restricted Zone at St Sampson is optimal.	P	P	P	✓	✓	✓	✓
Foot passengers can easily walk to the centre.	✓	✓	✓	✓	✓	✗	✓
Can accommodate >80m bulk vessel.	✗	✗	✗	✓	✓	✓	✓
Can accommodate >80m LoLo vessel.	✗	✗	✓	✓	✓	✓	✓
Avoids Hydrocarbon delivery by Not Always Afloat But Safely Aground (NAABSA) tanker.	✗	✗	✗	✓	✓	✓	✓
Hydrocarbon delivery by Unitised International Standard Organisation (ISO) tanks.	✓	✓	✓	✓	✓	✓	✓
Hydrocarbon delivery, always afloat berth.[24]	✗	✗	✗	✗	✓	✓	✓
Hydrocarbon delivery by Multi Buoy Mooring. [19]	✗	✗	✗	✓	✗	✗	✗
Commercials removed from St Peter Port Harbour.	✗	✗	✓	✓	✓	✓	✓
Commercials removed from St Sampson's Harbour.	✗	✗	✗	✓	✓	✓	✓
Low impact on heritage and character.	✓	✓	P	P	P	P	P
Low impact on natural environment.	✓	✓	P	P	P	P	P
Land reclamation.	✗	✗	✓	✓	✓	✓	✓

[19] This criterion can be best optimised through the combinations shown but technically could be delivered as a separate investment without the need for any other port development.

7 Assessment of Combinations

7.1 Each of the combinations was scored by a panel of experts, against various evaluation criteria.

7.2 The evaluation panel provided a range of experience and subject matter expertise, comprising port operations, environment/biodiversity, economic development, planning policy, civic design, and the Commercial Ports Investigation Board.

Evaluation Criteria

7.3 The Evaluation Criteria align with the published SEA programme 'statements of intent', as approved by the States Assembly in 2020. They were developed through workshops involving members of the Commercial Ports Investigation Board and officers from both Guernsey Ports and the SEA programme.

7.4 A draft set of evaluation criteria was shared with the Committee *for* Economic Development, Committee *for the* Environment & Infrastructure, and the Policy & Resources Committee, as well as the Development & Planning Authority; and with other stakeholders through a series of presentations in December 2020 and January 2021. All the feedback received was then incorporated before the final criteria were agreed and are outlined below in paragraphs 7.5 to 7.14.

1: Operational Efficiency

7.5 'Operational Efficiency' refers to a layout that optimises the operational activities of all port users, which enables them to co-exist in harmony with broad community use. The desired option should enable the ports "to be operated in a commercial manner to maximise its financial performance, with emphasis being placed on providing services that are suitable and fit for a wide popular market through the provision of well-regulated and safe facilities for the harbouring, handling, management of vessels, and the transportation of passengers and freight"[25], whilst at the same time maximising a combination of both social benefits and commercial contributions to Ports' trading accounts. Operational efficiency is a vital consideration for traditional freight and passenger services and for enhancing the cultural and recreational offering of Guernsey's east coast. The degree to which the option is workable given prevailing navigational challenges, as well the impact that an option would have on business as usual during its construction and implementation, was also considered.

[25] Primary function as defined in the Guernsey Ports Business Plan.

2: Aligning with Extant Policy, Legislation and Developing Strategies

7.6 'Aligning with Extant Policy, Legislation and Developing Strategies' refers to the extent to which an option meets legislative requirements, international obligations and expectations, environmental designations, and States of Guernsey strategic objectives, some of which are in development. An Environmental Impact Assessment will be a requirement for any chosen option carried out at a later stage, however, known environmental conditions should be considered from the outset. Future regulatory requirements relating to the International Ship and Port Facility Security Code and its future development must be accommodated. Options should facilitate the extant Resolutions of the States of Deliberation relating to relevant policies, such as the Strategy for Nature, Transport Policy, Energy Policy, Climate Change Policy and Climate Change Action Plan, and facilitate the future supply options for hydrocarbons to the island in line with projected demand. An option's potential effect on international designations, such as that of Herm, Jethou and the Humps as a Ramsar site should be recognised and options should synergise with other work streams occurring within the same geographic area.

3: Improving Access, Reducing Overcrowding and Confliction

7.7 'Improving Access, Reducing Overcrowding and Confliction' refers to the provision of a congruous sharing of port and adjacent environs by all at St Peter Port and St Sampson, and optimises the inter-connectivity between sectors. This criteria will be considered in relation to activities on land and activities on the sea.

7.8 On land, it is anticipated that the impact of parking on St Peter Port would be addressed by relocating the parking away from the surface of the piers, without reducing the number of spaces available in the St Peter Port main centre inner area[26]. Ease of access should be maintained or improved to the main centre inner areas whilst creating an appropriate balance of pedestrian and motor vehicle activity. The conflict between commercial and domestic vehicles, as well as the conflict between vehicles, cyclists and pedestrians should be reduced. Better management of these conflicts should reflect the transport hierarchy[27], and should improve safety and access to the main centre inner areas and for all port users. Consideration must also be given to the traffic flows to the North, West and South caused by the location of the main commercial harbour.

[26] Main centre inner areas are defined in the Island Development Plan.

[27] The transport hierarchy sets out the order of preference in terms of mode of travel, as follows: pedestrians > bicycles > public transit > commercial vehicles > taxis > high occupancy vehicles > single occupancy vehicles.

7.9 On the sea, it is important that adequate separation between commercial and leisure vessels of all sizes is provided. It is desirable that sufficient space and facilities are provided to enhance the recreational and sport experience at the Ports. Opportunities to improve the availability of such facilities and to increase tidal access for leisure based water-borne activities are desirable.

4: Enhancing Economic Opportunity

7.10 'Enhancing Economic Opportunity' refers to the provision of an attractive seaboard location that nurtures new and emerging business opportunities and markets, which will develop and sustain the local economy and enhance urban centres in Guernsey. The aspiration is to provide options which enhance the contribution of Guernsey's tourist industry and its indigenous industries, through development that focuses on improving the visitor experience and enhancing the contribution of Guernsey's retail sector. Any development around St Peter Port Harbour and St Sampson's Harbour should encourage greater footfall in the main centre inner areas along the east coast and increase the attractiveness of the eastern seaboard for visitors and locals alike. All of Guernsey's marine based industries should be able to be supported through a development that provides suitable infrastructure, services and facilities that benefit both locals and visitors. The potential for Guernsey to become a premier destination for the berthing of private larger yachts and superyachts should not be ignored.

5: Improving Public Amenity

7.11 'Improving Public Amenity' refers to an option's ability to enhance the cultural, historical and recreational provision, to promote community wellbeing and sense of place, in synergy with the natural environment, economic growth and social investment. Whilst building on Guernsey's unique heritage, considered development should focus on creating space that encourages recreational activities and amenity uses that provide wider benefits for the community. Opportunities for the provision of open space along Guernsey's east coast should be maximised. This space could contribute to the local arts community, through the provision of facilities that enable the creation and display of local and international arts. The value of adjacent public amenity spaces, such as Havelet Bay, the Model Yacht Pond and the Castle Breakwater, should be considered in this context. Any development should strive to enhance Guernsey's culture and leisure offering and should seek to increase the interconnectivity between people and place. However, the long period of construction should be managed and phased in such a way as to minimise the impact on public amenity.

6: Ensuring Sustainability

7.12 'Ensuring Sustainability' refers to solutions that are environmentally sustainable, exemplary in design, fit for purpose and of which future generations can be

proud. It is assumed that sustainability of construction methods, materials and design will be incorporated into the detailed design of the chosen option. However, at this stage options should be evaluated against an option's ability to sequester carbon and protect Guernsey's east coast from sea level rise. The employment of green technology should be maximised, such as the provision of ship to shore plug in electricity supplies to cater for electrically powered vessels. The potential value of eco-tourism and educational opportunities should not be missed.

7: Creating a Physical Legacy

7.13 'Creating a Physical Legacy' refers to choosing an option that strives to be an ambitious, aesthetically pleasing development which builds upon and enhances St Peter Port's reputation for being a destination port, with a rich history of being a most welcoming port to visitors and locals alike, and provide St Sampson's Harbour with similar opportunities. The desire to create a legacy for generations to come that is attractive to behold, should not be compromised by the cost of creation and should attempt to balance the natural environment, social and economic competing elements of such a large piece of local infrastructure in deciding upon the ultimate solution.

8: Providing Flexibility

7.14 'Providing Flexibility' refers to a solution that balances present requirements with the necessity to provide future generations with opportunities to adapt and enhance the space to meet their needs. It is desirable for a development to be flexible in its spatial design such that it could be adapted to meet changing requirements in future years. Potential for economic growth should be considered, as well as means to continually review and improve the cultural, recreational and social offering of the area; not only in terms of the provision of open space, but also in the design of buildings so that benefits can continue to be realised in the long term.

Tidal Modelling

7.15 As well as a high level appraisal of each of the options against the aforementioned evaluation criteria, initial tidal modelling has been undertaken to ascertain whether tidal constraints exist which will hinder operations at any of the proposed locations for development of new port facilities.

7.16 A prerequisite for any harbour facility is that for the intended shipping, its waters and approaches are sufficiently safe to navigate, that is to say that at least they are accurately charted, of sufficient depth, free from obstruction and adverse tidal flow. For some options there exists contention in this area. The approaches to the current St Sampson's Harbour are difficult to navigate and commercial

vessels require the services of local pilots. Navigation is particularly difficult in poor visibility and/or when tide rips are experienced. The difficulties are compounded because of the need for large vessels to enter the harbour approaches at times of high tides, when strong tidal streams are present, to take into account the depth limitations of the harbour.

7.17 From an operational perspective, it is important to note that there is already a tidally constrained Harbour in Jersey and introducing a second tidally constrained Harbour on the UK/Channel Islands route would make a scheduled passenger ferry service challenging. Accordingly, any new harbour facility provided in Guernsey has to ensure that it does not create further tidal restrictions that would impact on regular scheduled services that operate between both islands.

7.18 It is worth noting at this juncture that previous studies carried out including detailed work into a commercial port development directly outside the mouth of the existing port at St Sampson's Harbour, concluded that the navigational challenges meant that this location is not suitable for fixed scheduled services.

7.19 As part of this future port development work, BMT Ltd were commissioned to undertake virtual simulation runs into ports at Longue Hougue South and east of the QEII Marina, using industry leading Rembrandt software, and to prepare a Guernsey Future Harbour Manoeuvring Simulation Study[28].

7.20 Three vessel types were simulated: A 'Liberation' type fast ferry; A 'Clipper' type 135 metre RoPax, and a 135 metre single shaft vessel with handling characteristics similar to the general cargo and tanker vessels which currently frequent our harbours. Runs were conducted for each vessel type using flood and ebb tides, and a range of tidal streams up to a maximum of 5 knots, in a variety of simulated wind conditions up to a maximum of 30 knots.

7.21 Although the same wind speeds were used at both locations, the northern port is likely to experience a greater incidence of high wind speeds than the southern port. This is due to the high terrain to the south and west of the island which affords better shelter from prevailing winds. The results of the simulation are summarised below.

7.22 For a development east of the QEII Marina, in general the port arrangements are suitable for all vessel types in all states of the tide up to a maximum wind of 30 knots. Entries at a maximum ebb (southerly) tidal flow are challenging, but would be within safety margins with practice.

[28] Link to full Guernsey Future Harbour Manoeuvring Simulation Study (BMT Report) hosted online: https://gov.gg/CHttpHandler.ashx?id=139128&p=0

7.23 For a new northern port at Longue Hougue South, the maximum flood (northerly) tidal flows of up to 5 knots across the harbour entrance were acceptable for all vessel types in all wind conditions, however harbour entry was made much more difficult in maximum ebb tidal flows of 3.5 knots or above. At all states of the tide there were berthing challenges in 30 knot winds from the north east. For these reasons it is very likely that entries to a harbour at Longue Hougue South would not be practicable during spring ebb tides. This would make a harbour in this location more tidally constrained than the existing harbour at St Peter Port, for all vessels.

7.24 In addition to the digital modelling work and tidal data collection undertaken, an observational survey of tidal steams in the coastal area of Longue Hougue South was undertaken during the spring tide on 30th March, 2021. This tide was predicted to be the greatest tidal range this year, at 9.6 metres. Observations were made from the pilot vessel and witnessed by the Harbourmaster, Master Pilot, Pilot and Programme Lead. The pilot vessel was positioned in various locations, and readings of tidal velocity and direction taken using three independent GPS receivers. Although during this validation exercise, the ebb tide values were 0.5 knots higher than those previously observed by the ADCP buoys, nothing was observed which would change the conclusions reached from the digital modelling, the practical implications of which are described below.

7.25 To assess the number of days when the tidal stream would exceed safe limits, only days where the high tide reaches 9.0 metres or greater have been counted. These follow the same pattern every year and in 2021 the frequency is as shown in Table 7.

Table 7: Number of days per month in 2021 on which the tidal stream would exceed safe limits to enter a port at Longue Hougue South for a short period of time.

Month	**Days**
January	6
February	6
March	11
April	11
May	5
June	4
July	4
August	9
September	11
October	11
November	8
December	6
Total	**93 days**

7.26 Analysis of the tidal information from the Admiralty chart and tidal atlas indicates that the strength of tidal flow in the Little Russel channel decreases by 21-23% one hour either side of Low Water. For a maximum ebb tidal flow of 3.5 knots, this would equate to a reduction of 0.8 knots, leaving a resultant tidal stream of 2.7 knots. It is therefore assessed that outside of 1 hour before and after low water, the tidal stream would be manageable for harbour entry and exit.

7.27 In summary it is assessed that, based on the data currently available, that there would be 93 days in any year where entries and exits at this location would be very difficult for a total period of 4 hours, comprising a 2 hour period centred on each time of low water. While tide times vary throughout the year, these very low spring tides typically occur between 0100-0330 and 1300-1530, and occur for between 2 and 5 consecutive days each fortnight.

7.28 For the existing harbour of St Peter Port, in any one year there are 52 days where the harbour is restricted due to height of tide (not tidal stream) for conventional ferries, whilst general cargo LoLo ships enjoy almost unrestricted access to berths throughout the same period. Under the Longue Hougue South proposal, assuming there are no restrictions on height of tide due to sufficient dredging/blasting, restrictions caused by excessive tidal stream will restrict entry for conventional ferries on 93 days of the year, an increase of 78% compared to current arrangements.

7.29 This will create scheduling challenges for RoPax ferry operators, as St Helier has restrictions for conventional ferries on an average of 340 days of the year. Whilst the tidal stream restrictions for the Longue Hougue South development could also affect general cargo and LoLo vessels, it would be operationally straightforward to plan to avoid peak tidal flows for such vessels, which do not have to conform to such a strict schedule.

7.30 The impact of these delays on scheduled freight and passenger movements, combined with the impacts of tidal restrictions at Jersey would present increased challenges to the operation of a scheduled passenger ferry service from this location which, in consultation with current operators, has been identified as unacceptable.

7.31 Simulations for both locations provide information which will become a useful influence for the next stage of design of a port at either location, for example the length or angle of any new breakwaters and the location of potential RoRo ramps within the new port.

Environmental Considerations

7.32 Natural capital is the world's stock of natural resources, including living organisms, soil, air and water and it is from natural capital that the human race derives a range of benefits referred to as ecosystem services. Ecosystem services not only make life possible, but also enhance quality of life. It is probable that such a large scale development as proposed in this policy letter would have both positive and negative impacts on ecosystem services.

7.33 A detailed analysis of the natural capital gains and losses would be undertaken at a much later stage of the project for the chosen combination in line with the Green Infrastructure Plan[29].

7.34 In considering the potential options for future port development, the States must consider the known high level, and potential, environmental impacts on both our marine, air and terrestrial environments as well as the potential wider implications of such effects, for example on carbon sequestration or fisheries.

7.35 In relation to climate change, the Strategy for Nature states "How human made pressures to nature – i.e. development and land use change; lack of knowledge, understanding and will; invasive non-native species; exploitation of marine resources; and pollution – are managed at a local scale ultimately translates into the level of resilience of our local species and habitats to adapt to the long-term threat of climate change."

7.36 Natural marine habitats such as maerl and eelgrass beds and kelp forests sequester significant amounts of carbon; for example seagrass meadows store carbon as effectively as forests (380 - 400kg of carbon dioxide per hectare, per year).[30] Both eelgrass and maerl habitats support fisheries in their roles as nursery habitats, and are highly biodiverse. Maerl beds are particularly slow growing; maerl cannot be translocated in the way that eelgrass can and it is considered to be a non-renewable resource.[31]

7.37 From work undertaken on the EIA for Longue Hougue South Inert Waste Project it is noted that there are environmental risks and impacts from any development of this physical scale, resulting in alterations in coastal hydrodynamics, which in turn could alter longshore drift, sediment deposition and erosion rates, leading

[29] One of the emerging strategic recovery actions in the Government Work Plan – Stage 1.

[30] Source: Project Seagrass - an environmental charity devoted to the conservation of seagrass ecosystems through education, research and action.

[31] Source: MarLIN (Marine Life Information Network) Online resource of the Marine Biological Association providing information on the biology of species and the ecology of habitats found around the coasts and seas of the British Isles.

to impacts on marine and coastal habitats and their ecosystem services. It has to be assumed therefore, that any option to develop a new port either at Longue Hougue South or east of the QEII Marina will have similar effects which need to be modelled and assessed as part of a detailed EIA for whichever combination is chosen.

7.38 This EIA for the Longue Hougue South Inert Waste Project has concluded that the construction and operation phase residual (i.e. once fully mitigated) impacts for marine ecology are classified as "Negligible to Minor Adverse" in the published Longue Hougue South Environmental Impact Assessment[32]. However, the scope of the Longue Hougue South Inert Waste reclamation and a new port at Longue Hougue South are different, therefore these results cannot be relied upon to indicate the outcome of a specific EIA for a port development in the same location.

7.39 The EIA for potential land reclamation east of the QEII is underway, however no conclusions have been determined as this work is not yet complete, due to delays to a number of the required surveys caused by Covid-19. Acoustic Doppler Current Profiling, air quality, seabird, marine mammal and intertidal[33] ecology surveys have been completed. The benthic[34] survey which was due to take place in April 2020 has been delayed due to Covid-19 constraints. Also still to be completed, at the time of writing, are traffic, background noise, and marine mammal acoustic surveys. It is anticipated the EIA will be completed in Q4 2021, and will help inform the Marine Economy Supporting Plan.

7.40 The intertidal habitat survey has found significant eelgrass habitat in the east of QEII EIA study area. Eelgrass habitats also extend sub-tidally therefore it is possible that more of this habitat could be found when the benthic survey is carried out. Maerl is a subtidal habitat and due to the delay to the benthic survey, as yet there is no indication whether this important habitat is present in the east of QEII EIA survey area.

7.41 Any option involving development will have environmental impacts which will require further understanding and mitigation. Exactly what mitigation is required will be determined at a later date, once the detail of the preferred combination is worked through and the design of a final solution determined. However, the Strategy for Nature states that "the 'precautionary approach' requires that, where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing a measure

[32] Longue Hougue South Environmental Impact Assessment.

[33] 'Intertidal' refers to the area which is covered by the sea at high tide and uncovered at low tide.

[34] 'Benthic' refers to the area of seabed below the Low Water Spring mark (i.e. that is always covered by water).

to prevent degradation of the environment", thus where mitigation measures are more likely than not to be required, they should be advanced in a timely manner and not delayed until the commencement of infrastructure work on site.

7.42 The Marine Economy Supporting Plan also has a future role in identifying the most sensitive impacts on the natural environment, as well as how to mitigate any adverse effects and enhance any beneficial effects on the environment.

Protection from Sea Level Rise

7.43 The 2007 Royal Haskoning Coastal Defence and Beach Management Strategy[35] report states in relation to St Sampson that: "Predictions of climate change indicate that coastal defences will be subject to increasingly onerous conditions. The potential impacts to this coastal unit [section of the coast] within the strategy life are envisaged as follows:

- Scour at toe – contributing to possible toe undermining;
- Wave overtopping – more hydraulic actions against the seawalls, piers and rock revetments;
- Increased sea level – the defences within the harbour itself lead on to a large low lying hinterland extending over much of the northern section of the island. With sea level rise in the long term there may be a flood risk from still water levels. This needs to be confirmed or dismissed with level surveys undertaken to the harbour walls."

7.44 To mitigate the predicted risks at St Sampson's, the report recommends that the strategic policy is to 'Hold the Line'; that is to sustain or improve the existing defences so the existing defence line is held at the sea wall.

7.45 In 2012 Royal Haskoning conducted Flood Risk Assessment Studies[36] and in this updated report it is also suggested that opportunities for a harbour barrage are examined. This action was deemed by them as low priority and subject to the future plan for St Sampson's Harbour.

7.46 In relation to St Peter Port, the Royal Haskoning 2007 report states that the potential impacts of climate change on the defences at St Peter Port Harbour are:

- "Wave overtopping – contributing to more frequent wave overtopping on the pier during storm events;
- Sea level rise – increase flood risk to the back of the harbour."

[35] Royal Haskoning Coastal Defence and Beach Management Strategy (2007)
[36] Royal Haskoning Guernsey Coastal Defences Flood Risk Assessment Studies (2012)

7.47 To mitigate the problem of overtopping in key areas such as the Victoria Marina, the report recommends that local sections of the seawall are raised to reduce the instances of coast road closure and localised flooding. The preferred strategic policy for the St Peter Port frontage is also to 'Hold the Line'.

7.48 Updated sea level rise predictions have been used to inform the engineering design of the proposed structures for a new port development, east of the QEII Marina. These predictions are based on UKCP18[37] (United Kingdom Climate Predictions) and predict a 0.553m level of rise over the next 50 years[38].

7.49 Adaptation in relation to sea level rise should be considered and developed whilst undertaking port design, particularly where phasing of implementing the solution might form part of the adaptation to climate change and sea level rise. The port designer should apply a whole life approach (including discounting of future costs to reflect the time preference for delaying investment) to compare the cost efficiency of a single intervention versus multiple interventions linked to climate change (sea level rise) adaptation. Some elements of a design, for example its foundations and footprint, are difficult to adapt and experience and judgement should be applied to determine where adaptation is best suited. In considering the adaptation, the port designer should also consider higher estimates of sea level rise and how this may affect the timing of any future phases and thus should set the upper limit to be considered. Royal Haskoning state that cost is not the only consideration in selecting the adaptive approach as other impacts such as visual impact may also favour an adaptive approach.

8 Result of Panel Evaluation of Option Combinations

8.1 The Evaluation Panel convened on 26th February, 2021, to undertake the evaluation exercise of the seven combinations against the eight evaluation criteria described in paragraphs 7.5 to 7.14.

8.2 At a previous meeting, the Programme Board had agreed the weighting of each of the evaluation criteria as outlined in Table 8.

[37] UKCP18

[38] The grid cell for Guernsey was selected and time-mean sea level anomaly (m) from 21st Century Projections for RCP8.5 scenario was obtained for the 95th percentile to give this conservative prediction of sea level rise at St Peter Port.

Table 8: Weighting of each Evaluation Criteria used to determine the Preferred Combination

Evaluation Criteria	MoSCoW[39] weighting	Weighting
Improving operational efficiency	Must have	9
Aligning with extant policy & legislation	Must have	9
Improving access, reducing overcrowding and confliction	Must have	9
Enhancing economic opportunity	Should have	6
Improving public amenity	Should have	6
Ensuring sustainability	Should have	6
Creating a physical legacy	Should have	6
Providing flexibility	Must have	9

8.3 Using an electronic voting keypad, panel members scored each of the Combinations against each of the Evaluation Criteria in turn, on a scale from 1 to 4 depending on the extent to which each of the Combinations meet the Evaluation Criteria, whereby: 1 = 'not at all', 2 = 'somewhat', 3 = 'mostly', 4 = 'completely'.

8.4 The results of the evaluation are shown in Table 9. The scores are illustrated as a percentage of the total possible weighted scores. For the avoidance of doubt these scores rank the options before any consideration of their respective, estimated, capital costs.

Table 9: Results of evaluation of options

Combination	Weighted score
Combination 1 – Minimal Change	36%
Combination 2 – Reconfigure St Peter Port Harbour	56%
Combination 3 – Extend St Peter Port Harbour eastwards	65%
Combination 4 – Extend St Peter Port Harbour eastwards and construct a new bulk fuel import facility	70%
Combination 5 – Construct a new northern port for some freight and fuel	78%
Combination 6 – Construct a new northern port for all freight, fuel and international passengers	75%
Combination 7 – Extend St Peter Port Harbour eastwards and construct a new northern port for some freight and fuel	76%

[39] MoSCoW prioritisation framework

8.5 Discussion and moderation during the Evaluation Panel meeting raised some points worthy of reflection.

8.6 During the evaluation, the prospect of the capacity of the ports, surrounding infrastructure and effect on traffic if quarrying no longer occurred on island and all aggregate is imported was raised. St Peter Port has the capacity to accept a significantly greater number of ships than at present, however the potential impacts of such additional commercial vehicular traffic traveling from St Peter Port Harbour cannot be ignored, and this was reflected in the scoring where the combination involved moving bulk freight to St Peter Port Harbour.

8.7 Whilst both Combinations 1 and 2 do not have a detrimental impact on marine ecology and have the least severe visual impact of all of the proposed schemes, they are not optimal operationally and do not enable the wider benefits which the remaining combinations do. The issue of NAABSA vessels is also not addressed.

8.8 There is future potential to combine the bus terminus and ferry passenger terminal in the creation of a transport hub at North Beach as well as a multi-storey car park, for any of the combinations which include the reconfiguration of St Peter Port Harbour. This was seen as a benefit and favoured options which included the reconfiguration of the North Beach and White Rock areas at St Peter Port.

Short-listed Combinations

8.9 The three top scoring options were carried through to a short-list, shown below in Table 10 in ranked order, along with the estimated cost of each option. The top three options scored closely, therefore the results were further validated through discussion by the Programme Board, taking into consideration fundamental practicalities as well as the cost implications of each of the options.

Table 10: Short-listed Combinations in ranked order and their approximate cost

Short-listed Combinations	**Weighted score (%)**	**Cost**
Combination 5 – Construct a new northern port for some freight and fuel	78	£361m
Combination 7 – Extend St Peter Port Harbour eastwards and construct a new northern port for some freight and fuel	76	£706m
Combination 6 – Construct a new northern port for all freight, fuel and international passengers	75	£354m

8.10 Combination 6 presents issues in relation to scheduled passenger services. As described in the BMT Ltd report the Rembrandt modelling found that, based on the concept scheme developed by Jacobs, a new port facility at Longue Hougue South would be difficult to access on certain states of the tide. As outlined in paragraph 6.46, this would not be an issue for some services, such as bulk freight deliveries, which can be timed accordingly. However, they do present a potential challenge for scheduled services, such as passenger ferries.

8.11 Combination 7 would involve considerably greater development than the other two combinations, which is likely to involve greater disruption over a longer period. It is also estimated to cost around twice as much and was not considered to deliver significantly greater benefits than the other two short listed combinations.

8.12 Concerns have also since been raised that post-Brexit, customs requirements would be much more challenging to resource with significant numbers of international passengers and boat crews arriving in more than one port.

Preferred Combination

8.13 The preferred, and therefore recommended, Combination for the future harbour development is the construction of a new northern port for some freight and fuel, identified in the evaluation as Combination 5 and shown in Figure 6.

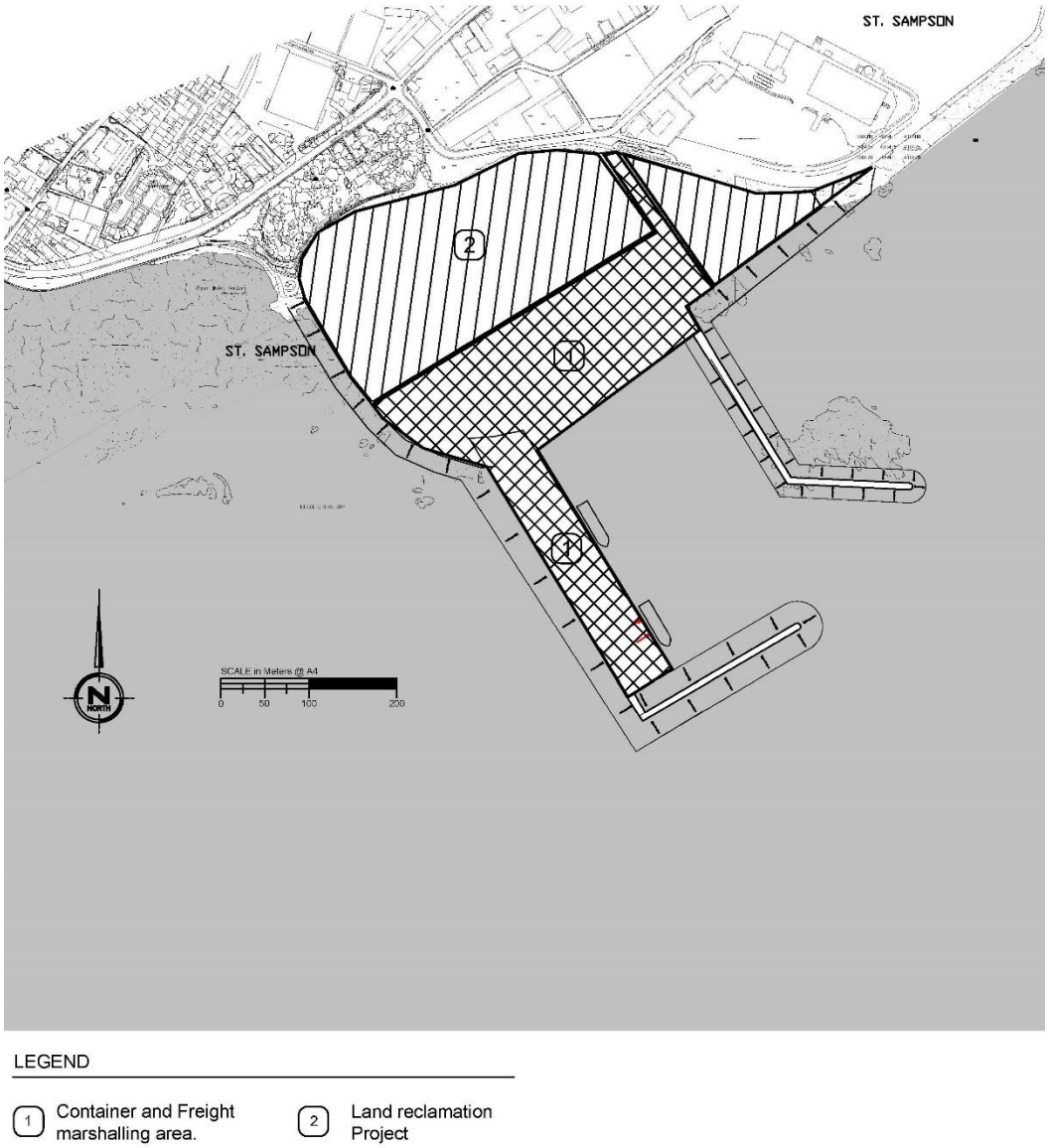


Figure 6: Indicative layout of a northern port at Longue Hougue South

8.14 This would include investment to address the condition of the current harbours. Port operations around the North Beach and White Rock would be reconfigured, as indicated in Figure 7 to reduce the current conflicts and over-crowding at St Peter Port, and a new passenger ferry terminal and Guernsey Border Agency control point will be constructed. A new warehouse, workshop, stores and offices for the Ports Operational Team will release the Cambridge Berth area for future development and realisation of economic and social benefits.

LEGEND

1. New International Ferry Terminal building at first floor over car marshalling and border control area.
2. Inter Island passenger drop off
3. North Beach Car park 2 lower parking levels added, ground level for public use.
4. Land released for other uses.
5. Guernsey Harbour office and workshop area.
6. Harbour restricted area freight marshalling area.
7. Potential leisure marina provision.
8. Additional cruise tender pontoon

Figure 7: Indicative new layout of the North Beach and White Rock areas

8.15 RoRo services would continue in St Peter Port. The construction of a harbour at Longue Hougue South would provide bulk, liquid and LoLo handling of freight, relieving both St Peter Port and St Sampson's Harbours of these requirements.

8.16 This combination enables the conversion of the remainder of St Sampson's Harbour into a marina for leisure craft. Land areas currently used for freight discharge would become available for future development and enhancement, facilitating the regeneration of the Bridge.

8.17 The cruise tender berth at St Peter Port Harbour would be lengthened, Hydrocarbon discharge could be implemented via either ISO tank container or tanker alongside at the new port at Longue Hougue South.

8.18 The current proposition for Longue Hougue South as an inert waste site would be advantageous to the project to build a new commercial port in the same location in terms of cost reduction, however the two projects are not interdependent.

8.19 The requirement to construct and complete a new land reclamation scheme primarily to support a Port, whether or not under Combination 5, will necessitate additional landfill material. That landfill material could either be stockpiled within the existing Longue Hougue reclamation site, or by mining areas of landfill already completed within that site. As a result of this potential requirement to stockpile or extract material from the existing site, it is considered prudent to request that the Policy & Resources Committee consults with the States' Trading Supervisory Board prior to entering into any lease at the existing site, until this long term dependency on material from that site is better understood. Any leases entered into should be capable of termination at a period of short notice (12 months).

8.20 Should Longue Hougue South not be used as an inert waste site, it is likely that the design of a port would be optimised in line with the underlying geology, although the approximate footprint would remain similar to that of the concept design to meet the required depth of water for a port. Any residual land not required for port operations could be allocated for ancillary purposes, which use could include relocation of existing fuel farm infrastructure, and/or used to accommodate those businesses that might be displaced from St Peter Port as that harbour is reconfigured.

Potential Future Proofing

8.21 In the evaluation, Combination 5 was preferred to the option of constructing a port at Longue Hougue South that would enable all commercial freight activity (i.e. LoLo, RoRo, and bulk imports) to be relocated away from St Peter Port and St Sampson's Harbours - as described in Combination 6. This was in part due to the potential tidal restrictions in this location, which may reduce accessibility for scheduled services (e.g. RoRo) on certain days, as discussed in paragraphs 7.23 to 7.30.

8.22 In terms of harbour requirements, the main difference between the two Combinations is the location of specific port activities, which will determine what facilities and equipment is required in each location. In terms of the construction of the outer breakwaters for a new northern port and the general layout, there is little variance between Combinations 5 and 6. Similarly, at this stage there is anticipated to be relatively little cost difference in the construction of these breakwaters. It is the intention that the design would be optimised for cost efficiency, in order to design the most economically advantageous port shape

(potentially following the outline of underlying geology where this enhances value for money), also in consideration of long term future proofing.

8.23 As with our current harbours, any new port development would represent a long-term investment in a facility that is expected to meet the island's requirements for generations to come. Over that time, it is entirely reasonable to expect some factors will change. For instance, any new port will be constructed to manage the anticipated sea level rise. Equally, it is very possible that the nature of vessels serving the island may change, as might the cargoes they carry.

8.24 As our current harbours have adapted and evolved over the decades to meet the island's changing requirements, so too would any new facility. Therefore while the STSB recommends Combination 5, the actual physical design of a new northern port can be such that it could be equipped at a later date to accommodate all commercial freight and international passenger activities currently located at St Peter Port Harbour, as envisioned in Combination 6. This would provide the flexibility and adaptability for any developments in, say, vessel design which may make this a more favourable option in the future.

9 Requirements for Investment in the Leisure Sector

9.1 As part of the Jacobs' FHR Study 2020 stakeholder engagement, various representatives from the leisure sector were consulted. Based on the information received from that engagement, some additional advice has been commissioned in conjunction with the SEA Programme, whereby Marina Projects (a marine industry specialist) has provided an assessment of the likely regional demand for leisure facilities to inform the development of the leisure sector[40].

9.2 In summary, the report identifies a number of natural advantages which Guernsey can offer to visiting yacht crew, and which makes it an attractive port of choice. These advantages include protection from prevailing weather, ready access to deep water and an attractive and interesting waterfront in St Peter Port with "potential to act as a magnet for marine leisure activity with appeal for resident boaters, visitors and superyachts."

9.3 The report also highlights the shortcomings of the berthing provision in St Peter Port. Whilst the number of berths is extensive, it falls short of a modern leisure marina for the following reasons:

[40] Link to full Marine Leisure Opportunities report hosted online (Marina Projects Report): https://gov.gg/CHttpHandler.ashx?id=139130&p=0

- The majority of berths are for smaller leisure vessels up to 12m in length;
- For local residents, only limited mains services are provided to some pontoons;
- For visiting yacht crews, both limited mains services and dated shore facilities are provided;
- Most of the berths are tidally restricted, with a lack of full tidal access facility.

9.4 It recognises that there is significant competition, from Jersey and marinas on the adjacent French coastline. Competing ports provide greater marine infrastructure, which in turn provides space for the growth of the marine trade sector so that there is greater variation in the way that servicing and repairs to vessels can be undertaken, with the majority of work in Guernsey having to be carried out with the vessel afloat because there is limited space ashore. Importantly, it states: "an expansion of the marina berthing offer in tandem with development of the marine sector support infrastructure would likely bring added benefits" and that the marine leisure sector is ideally placed to take advantage of the opportunities arising from the Future Harbour Development work.

9.5 With regard to superyachts, the report acknowledges that "Guernsey is a natural port of call and could extend its appeal as a stop-over, but is unlikely to be a true destination for significant numbers of superyachts", despite the forecasted growth in the world's fleet over the next 10 – 15 years. The level of superyacht activity in the Channel Islands area is currently limited by the facilities available, and this activity could be increased by improved and purpose designed facilities as superyachts would be willing to exploit advantages such as boat registration and low tax fuel.

9.6 Further work will be undertaken, also in conjunction with the SEA Programme, to expand upon this preliminary report and inform in more detail the long term leisure enhancements at St Peter Port and St Sampson's. Guernsey Ports is however committed to advancing options for the development of the leisure sector through the provision of improved marina facilities within the existing St Peter Port Harbour, being cognisant of the outcome of this debate.

10 Consultation

10.1 This section summarises the consultation which has taken place in the course of the work outlined in this policy letter. The FHR Study 2020 included significant consultation with harbour users from the commercial and leisure sectors.

10.2 Jacobs held eight stakeholder engagement meetings to discuss user needs for the harbours. A total of 57 people representing 46 organisations attended the meetings, with 45 individual contributions from those attending.

10.3 In addition, subsequent one to one meetings were held with the Harbours' two significant commercial stakeholders, Condor and Alderney Shipping, to discuss in detail the potential operational and business implications of relocating some freight and/or passenger movements out of St Peter Port Harbour.

10.4 Prior to the completion of the work to develop the combinations of options which are put forward in this policy letter, update presentations detailing the conceptual options provided by Jacobs and reporting on progress were delivered to the Committee *for the* Environment & Infrastructure, Committee *for* Economic Development and the Policy & Resources Committee prior to the convening of the Evaluation Panel and the finalisation of the Evaluation Criteria.

10.5 A series of Stakeholder Roadshow presentations were then delivered in early January 2021, delivering the same information as was delivered to the Committees. During lockdown, the remaining deputies who had not seen the presentation were invited to a final presentation delivered via Microsoft Teams. All of these stakeholders were also invited to provide feedback on the Evaluation Criteria, which were subsequently finalised incorporating the suggestions received.

10.6 Marina Projects, the consultancy engaged to deliver a piece specifically detailing the demand for the leisure sector, also consulted with eight leisure sector stakeholders, representing: Locate Guernsey, Guernsey Marine Traders, the Chamber of Commerce Blue Economy Group, Guernsey Boat Owners Association, Guernsey Harbours staff, a local yacht broker and a local superyacht agent.

10.7 Discussions have also been held with the Guernsey Border Agency regarding the requirements at the ports post-Brexit.

10.8 The outcomes of stakeholder engagement meetings and written feedback will be shared with the SEA Programme. The SEA Programme will be engaging in further consultation work, building on the relevant work already undertaken.

11 Conclusion

11.1 The States of Deliberation are presented with a unique opportunity, afforded to our predecessors only on very few previous occasions, to shape the future development of our Island's east coast by determining the direction of future port development.

11.2 The island is dependent on efficient facilities for the transportation of goods and people to and from the island and the current port arrangements are unsustainable for the reasons summarised in this policy letter. The long-term importance of this work to our island community as a whole cannot be overestimated.

11.3 The Preferred Combination proposed by STSB for the future harbour development is Combination 5: to construct a new northern port, at Longue Hougue South, primarily for unitised, bulk and liquid (fuel) freight. The commercial activities would be largely removed from St Sampson's Harbour, converting its use solely for the leisure sector and opening opportunities for the regeneration of St Sampson as a true second town. Essential repairs would be carried out to both harbours with an opportunity to extend the non-maritime leisure facilities within St Peter Port, using land released as a result of some harbour operations being reconfigured. The reconfiguration of harbour operations is likely to include the provision of a new passenger ferry terminal, repositioned Border Agency Control Point, and a multi-storey car park at North Beach, as described in detail in paragraph 8.5, and illustrated in Figure 6 and Figure 4.

11.4 The preferred Combination will ensure that Guernsey Harbours is able to continue to fulfil its core lifeline and societal obligations whilst safeguarding for sustainable long-term growth of maritime sectors.

11.5 A bold development of this scale will facilitate a broad spectrum of social and economic benefits across numerous industry support sectors. Existing issues of sub-optimal operations and confliction will be eliminated, and hydrocarbon discharge will be improved. This option strives to leave a positive legacy for future generations, creating additional open space for recreation within St Peter Port and St Sampson, engendering a sense of place and embracing Guernsey's heritage and arts sectors to provide enhanced seafront destinations.

11.6 There has long been a perception shared by the northern parishes of St Sampson and Vale that States' policies have led to overdevelopment of this part of the island. In particular that 'bad neighbour' activities are always located by default in the north of Guernsey.

11.7 Whether it is really fair to blame States' policies or this is simply an accident of history (e.g. waste disposal where the big quarries were, or the power station where fuel was imported), there is no denial that these parishes have seen more than their fair share of such 'bad neighbours'.

11.8 The creation of a new, deep water port would therefore represent an historic and largescale reversal of this trend. While any new port at Longue Hougue would still be in St Sampson, its impact on the life of the parish and its community

would be considerably less than the current impact of large scale, commercial activities inside the traditional harbour of St Sampson.

11.9 St Sampson's Harbour itself will be able to be converted into a characterful leisure port. Just as important, large swathes of land on North Side (Vale) and South Side (St Sampson) will be released from heavy commercial, port-related, activity and become available for lower impact activities.

11.10 At this stage it is impossible to gauge how much capital gain might be realised by the release of land around St Sampson's and St Peter Port Harbour to offset the cost of development. This will depend on any planning constraints, but can be expected to greatly enhance the environs of the Bridge, often called "Guernsey's second town". The work on the wider planning and enhancement of the seafront will provide the framework for such development, informed by the decisions resulting from this policy letter.

11.11 If combined with the long-awaited redevelopment of Leale's Yard, this would transform the Bridge, and breathe new life into the area. It would improve the commercial and leisure provision of the north of Guernsey where a very significant proportion of the island's population lives.

11.12 It is in taking the cumulative benefits from all aspects of the proposed development that the scheme would be justified in terms of overall economic benefit to the community.

11.13 A programme of this extent and nature requires resourcing on a significant scale. The STSB proposes that the Policy & Resources Committee through its seafront regeneration sub-committee, in respect of its role for developing the Seafront Enhancement Area, progresses this work in consultation with the STSB and forms a Future Harbour Development Programme Office, comprising a small team of officers dedicated to the project, to facilitate delivery and commencing at the earliest opportunity, reporting back to the States of Deliberation by December 2022.

11.14 Further work and investigative studies will be required to progress this Programme to develop more detailed proposals. These will include, but are not limited to, hydrographic modelling, site investigations, outline design, economic analysis, marine or coastal surveys, opportunities for early stage environmental offsetting and further stakeholder consultation. These costs and those pertaining to the establishment of a small Programme Office shall be treated as a pipeline project in the capital portfolio, with associated costs subject to approval by the Policy & Resources Committee. The costs of this further work will be developed with the Policy & Resources Committee but are currently estimated not to exceed £4 million by the end of December 2022, inclusive of officer time.

11.15 At this juncture, it is envisaged that upon reporting back to the States with more detailed proposals, the Policy & Resources Committee will be requested to investigate and propose appropriate funding mechanisms for the delivery of the scheme. The potentially significant investment required for the type and scale of development envisioned in Combination 5 will not be required until much later, with the largest elements relating to the construction phase, which is unlikely to commence before 2027 at the earliest. Full consideration will be given to all funding options, including private investment.

12 Compliance with Rule 4

12.1 Rule 4 of the Rules of Procedure of the States of Deliberation and their Committees sets out the information which must be included in, or appended to, motions laid before the States.

12.2 In accordance with Rule 4(1), the Propositions have been submitted to Her Majesty's Procureur for advice on any legal or constitutional implications.

12.3 In accordance with Rule 4(3), further details about the financial implications of the Propositions are included in paragraph 11.14.

12.4 In accordance with Rule 4(4) of the Rules of Procedure of the States of Deliberation and their Committees, it is confirmed that the propositions above have the unanimous support of the STSB.

12.5 In accordance with Rule 4(5), it is confirmed that the Propositions relate to the mandate of the STSB in respect of the management of St Peter Port and St Sampson's Harbours. The Propositions also relate in particular to the following Government Work Plan outcomes:

- Cultivate our local arts, culture and heritage (through the sensitive development of the east coast of St Peter Port, and or the Harbour at St Sampson's – with opportunity to provide enhanced areas of public amenity, opportunity for re-purposing existing harbours etc);
- Inclusive and sustainable economic growth and greater productivity (enabling changes to current methodology of import and export – including potential for increased shipments of bulk goods);
- Resilient and sustainable infrastructure and connectivity (securing lifeline sea connectivity through investment in aging port infrastructure).

12.6 Also in accordance with Rule 4(5), the STSB consulted with the Policy & Resources Committee in the preparation of the Propositions.

Yours faithfully

P J Roffey
President

C N K Parkinson
Vice-President

N G Moakes

S J Falla, M.B.E.
Non-States Member

J Hollis
Non-States Member

Future Harbour Requirements Study 2020

Options Development and Evaluation

B2382200-JAC-02-XX-RP-C-0003 | P06

08 October 2020

States of Guernsey

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
1	07/08/20	DRAFT - WIP	CH	MSS	OL	MSS
2	20/08/20	DRAFT 2	CH	MSS	OL	MSS
3	28/08/20	FINAL	CH	MSS	HB	MSS
4	21/09/20	FINAL (following client comments)	CH	MSS	OL	MSS
5	22/09/20	FINAL (Minor updates)	CH	MSS	OL	MSS
6	08/10/20	FINAL (Minor updates)	CH	MSS	OL	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Options Development and Evaluation
Document No.:	B2382200-JAC-02-XX-RP-C-0003
Revision:	P06
Document Status:	FINAL
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark Sherlock-Smith
Author:	Chris Hutchings
File Name:	B2382200-JAC-02-XX-RP-C-0003 FHR2020 Options Development and Evaluation Report (FINAL)

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Contents

Abbreviations

ABI	Area of Biodiversity Importance
CSF	Critical Success Factor
FHRS 2010	Future Harbour Requirements Study 2010
FHRS 2020	Future Harbour Requirements Study 2020
HFO	Heavy Fuel Oil
ISPS	International Ship and Port Facility Security
LHS	Longue Hougue South
LOA	Length Overall
LoLo	Load on Load off
mCD	Metres Chart Datum
MLWS	Mean Low Water Springs
NAABSA	Not Always Afloat But Safely Aground
RoRo	Roll on Roll off
SEA	Seafront Enhancement Area
SoG	States of Guernsey
SSS	Site of Special Significance
STSB	States Trading Supervisory Board
TGS	Twenty-foot Ground Slots

Executive summary

This report covers the options development and evaluation for the Future Harbour Requirements Study 2020 (FHRS 2020) carried out for the States of Guernsey (SoG).

The FHRS 2020 sits as one of the projects within the Harbour Development Programme and has its own Project Board. The FHRS 2020 aims to understand the future demand up to the year 2050 for commercial and leisure sectors in the ports, identify the spatial and facilities requirements for the ports and consider at least three options to meet these demands. The FHRS 2020 aims to produce rough order of magnitude costs and identify options to allow the States of Guernsey to determine a preferred way forward. It also provides information to assist the States Trading Supervisory Board (STSB) in responding to elements of the requête resolved in May 2019.

Earlier activities

Jacobs began the project with the Discovery phase, collecting and collating existing data and where possible filling the gaps and dealing with the uncertainties arising. The Discovery phase confirmed the key facilities and services provided in St Peter Port and St Sampson's Harbours.

Jacobs engaged with port users to better understand their needs. A demand forecast was then developed and the spatial and facilities requirements needed to meet the demand were assessed. The demand forecast included estimates for low, base and high demand scenarios for the period up to the 2050. The demand and requirements for commercial and leisure sectors, defined by Guernsey Harbours, were assessed as follows:

- Commercial: unitised cargo (LoLo and RoRo), bulk solids, international passenger and vehicular traffic (passengers, private vehicles, small commercial vehicles), and inter-island freight (Alderney)
- Leisure: cruise ships and tenders, visiting yachts, local yachts, super yachts, fishing vessels, inter-island passenger and inter-island freight (Herm, Sark and Brecqhou)

The bulk liquid demand was taken from the demand estimate established in the Hydrocarbons Supply Programme and has not been reforecast within this project.

The project team developed seven assessment criteria to provide a basis for evaluating whether a particular solution would properly address the objectives of the FHRS 2020 project:

1) Meets base demand and facility/spatial study requirements in 2030
2) Meets base demand and facility/spatial study requirements in 2050 and could meet high/low demand
3) Has limited environmental footprint
4) Meets or exceeds the safety and reliability of existing facilities
5) Can be delivered in stages to allow flexibility and financial management
6) Has synergy with other SoG infrastructure programmes
7) Will have a neutral or positive impact on the built environment

This report

This report describes and evaluates the options developed to meet the demand and assessment criteria.

Locations considered

We considered six locations along the east coast of Guernsey as illustrated below.

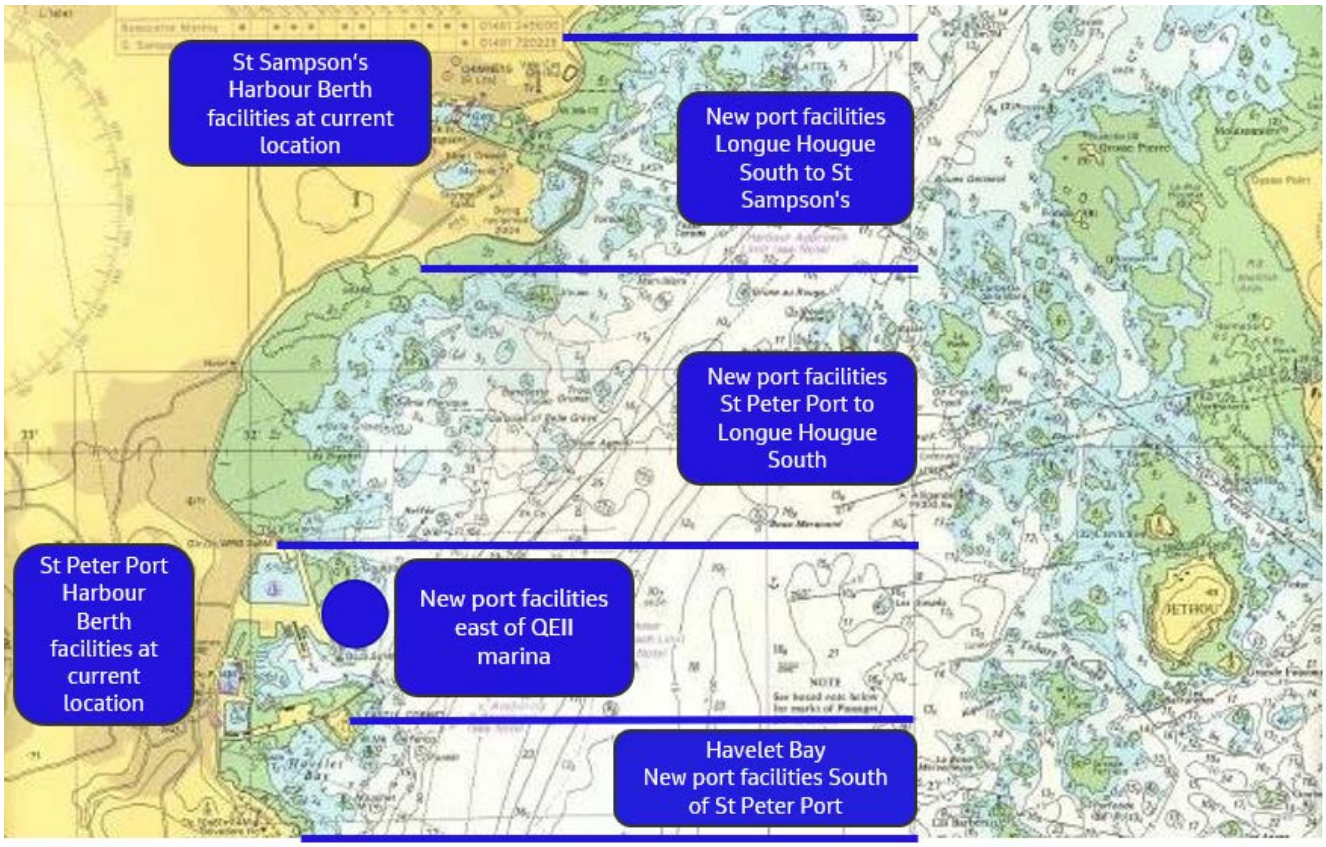


Figure 0.1: Considered locations

In general, locations north of St Peter Port Harbour (including St Sampson's Harbour and Longue Hougue South) typically achieved amber ratings against the assessment criteria, due to the difficult navigation access and/or environmental footprint.

The location east of QE II Marina in relatively deep water resulted in generally higher ratings than locations further north.

In Havelet Bay, south of St Peter Port Harbour, the environmental footprint and the main island power cable from Jersey typically led to amber ratings against the assessment criteria.

The existing facilities at St Peter Port Harbour generally met the assessment criteria, because their existing role ensured they met the environment, flexibility and built environment assessment criteria. Other assessment criteria could be met through reorganisation of facilities, which may involve the expansion of harbour operations into areas currently used for parking. In St Sampson's Harbour the evaluation was mixed because of the difficult marine access, known issues with the hydrocarbons upload and storage facilities failing to meet the Hydrocarbons Programme Critical Success Factors.

Scenarios considered

SCENARIO 0	SCENARIO 1	SCENARIO 2	SCENARIO 3
Leisure and commercial	Commercial sector only		
Do Nothing **Option 0.1:** Do Nothing at St Peter Harbour **Option 0.2:** Do Nothing at St Sampson's Harbour	**Do Minimum** **Option 1.1:** Reconfiguration of existing landside space & international passenger facilities on the New Jettv **Option 1.2:** Reconfiguration of existing landside space & international passenger facilities on Cambridge berth **Option 1.3:** Reconfiguration of existing landside space and providing passenger terminal above car marshalling area	**E of QE II Marina** **Option 2.1:** Breakwater and land reclamation with quay space. **Option 2.2:** Breakwater, dredging and land reclamation with quay space.	**Longue Hougue South** **Option 3.1:** Most commercial sectors to new port adjacent to Longue Hougue South **Option 3.2:** LoLo and bulk to new port adjacent to Longue Hougue South

SCENARIO 4	SCENARIO 5	SCENARIO 6
Leisure sector only		
Cruise Sector **Option 4.1:** Breakwater, dredging and land reclamation with quay space. **Option 4.2:** Additional tender berth	**Leisure Sectors** **Option 5.1:** Breakwater, dredging, additional marinas (St Peter Port & St Sampson's) and super yacht dedicated berth **Options 5.2, 5.3:** Breakwater, dredging, additional marinas (St Peter Port) and super yacht dedicated berth.	**Havelet Bay Leisure Sectors** **Option 6.1:** Havelet Bay Marina

Conclusions

All scenarios and their associated options are summarised in the table below. This table summarises each options' overall compliance with spatial and facilities requirements and the project's assessment criteria. Where the option is designed to cover only some sectors, compliance with the spatial and facilities requirements is presented only in relation to these sectors. The table also provides a capital cost estimate for each option.

Scenario / option	Meets relevant spatial and facilities requirements	Meets assessment criteria	Estimated capital cost range* (GBP) million
Scenario 0: Do Nothing			
Option 0.1: Do Nothing at St Peter Port Harbour	Partly	Partly	0
Option 0.2: Do Nothing at St Sampson's Harbour	Partly	Partly	0
Scenario 1: Do Minimum at St Peter Port Harbour for commercial sectors			
Option 1.1: Minimum changes at St Peter Port Harbour to meet requirements	Mostly	Yes	21 to 35
Option 1.2: Optimised St Peter Port Harbour layout to meet requirements and improve efficiency and security	Yes	Yes	27 to 45
Option 1.3: Alternative St Peter Port Harbour layout to meet requirements and improve efficiency and security	Yes	Yes	32 to 53
Scenario 2: Move St Peter Port Harbour commercial sectors to new facility East of QE II marina			
Option 2.1: E of QE II Marina no dredging	Yes	Partly	255 to 423
Option 2.2: E of QE II Marina most compact layout	Yes	Partly	217 to 360
Scenario 3: New Port for commercial sectors adjoining Longue Hougue South			
Option 3.1: Most commercial sectors to new port adjoining Longue Hougue South	Yes	Partly	164 to 272
Option 3.2: LoLo and bulk to new port adjoining Longue Hougue South	Yes for selected sectors	Partly	121 to 201
Scenario 4: Provide new cruise facilities			
Option 4.1: Cruise berth E of QE II marina	Yes	Partly	144 to 239
Option 4.2: Additional cruise tender berth	Yes	Yes	1.4 to 2.3
Scenario 5: Address future requirements for leisure facilities			
Option 5.1: New St Peter Port breakwater and marina with extended St Sampson's marina	Yes	Yes	60 to 100
Option 5.2: New breakwater, fishing quay and marinas in St Peter Port	Yes	Yes	70 to 115
Option 5.3: New breakwaters and marinas in St Peter Port with repurposed commercial berths	Yes	Yes	65 to 105
Scenario 6: Repurpose Havelet Bay			
Option 6.1: Havelet Bay Marina	Yes for selected sectors	Partly	55 to 95

Table 0.1: Summary of scenario compliance and cost

* Costs presented include Green Book recommended 66% optimism bias for high values and excludes any bias for low values

While no one option provides a solution for all commercial and leisure sectors, some options could be combined to address this. For example, if the following options were combined all spatial and facilities requirements and assessment criteria would be met:

- Option 1.2: Optimised St Peter Port Harbour layout to meet requirements and improve efficiency and security
- Option 5.1: New St Peter Port Harbour breakwater and marina with extended St Sampson's marina
- Option 4.2: Additional cruise tender berth

These options do not include a dedicated cruise ship berth, but that could be provided by replacing Option 4.2 with Option 4.1: Cruise berth E of QE II marina.

This example combination would fully satisfy all current and future spatial and facilities requirements to 2050, including the high demand scenario and would meet all assessment criteria. If Option 4.2 were progressed rather than 4.1, this could be achieved at the lowest capital cost.

Other combinations could be selected to achieve similar benefits, though at differing costs.

For the scenarios involving relocation of commercial activities from the existing ports, no assessment of the value/benefit to Guernsey has been considered regarding the space freed up within St Peter Port Harbour or St Sampson's Harbour. This assessment is beyond the scope of this FHRS 2020 but may be assessed at a later stage within the Harbour Development Programme or Seafront Enhancement Area (SEA) programme.

Limitation statement

The sole purpose of this report is to describe the development and evaluation of potential future harbour requirements for Guernsey within the framework of the Future Harbour Requirements Study 2020, as detailed in a contract between States of Guernsey and Jacobs.

Indicative harbour layouts and cost estimates have been prepared for comparative purposes only and will require further design development, site investigations and cost estimation to reduce uncertainty.

This report should be read in full, with no excerpts to be representative of the findings.

This report has been prepared exclusively for the States of Guernsey and no liability is accepted for any use or reliance on the report by third parties.

1. Introduction

1.1 Purpose

This report covers the options development and evaluation for the Future Harbour Requirements Study 2020 (FHRS 2020) carried out for the States of Guernsey (SoG).

1.2 Objective and context of the project

The objective of the FHRS 2020 is to evaluate the harbour requirements with the aim of identifying options to cater for the future needs of the harbours. The FHRS 2020 will also provide an updated version for the FHRS 2010 (carried out by Jacobs (formerly Halcrow)) and support a requête approved in May 2019 to:

"….carry out a detailed analysis of the future harbour requirements, including consideration of any requirement for new berth facilities east of the QEII marina or nearer to St Sampson's Harbour, and an assessment of the impacts, practicalities, and potential benefits of relocating some commercial port operations away from St Peter Port, and to report back to the States by December 2020….";

The requête is to be addressed in full by the Harbour Development Programme. The FHRS 2020 is only one part of the Harbour Development Programme, as on its own it does not address all of the questions raised in the requête.

1.2.1 Discovery

The project started with a Discovery phase – to collect/collate existing data, identify gaps that may affect the successful delivery of the Analysis phase and to make recommendations on how to fill the gaps or deal with the uncertainties arising. We have presented the results in the Discovery Report (B2382200-JAC-01-XX-RP-C-0001).

During the Discovery phase we confirmed the key facilities and services provided in St Peter Port and St Sampson's Harbour as illustrated in Figure 1.1 and Figure 1.2 respectively.

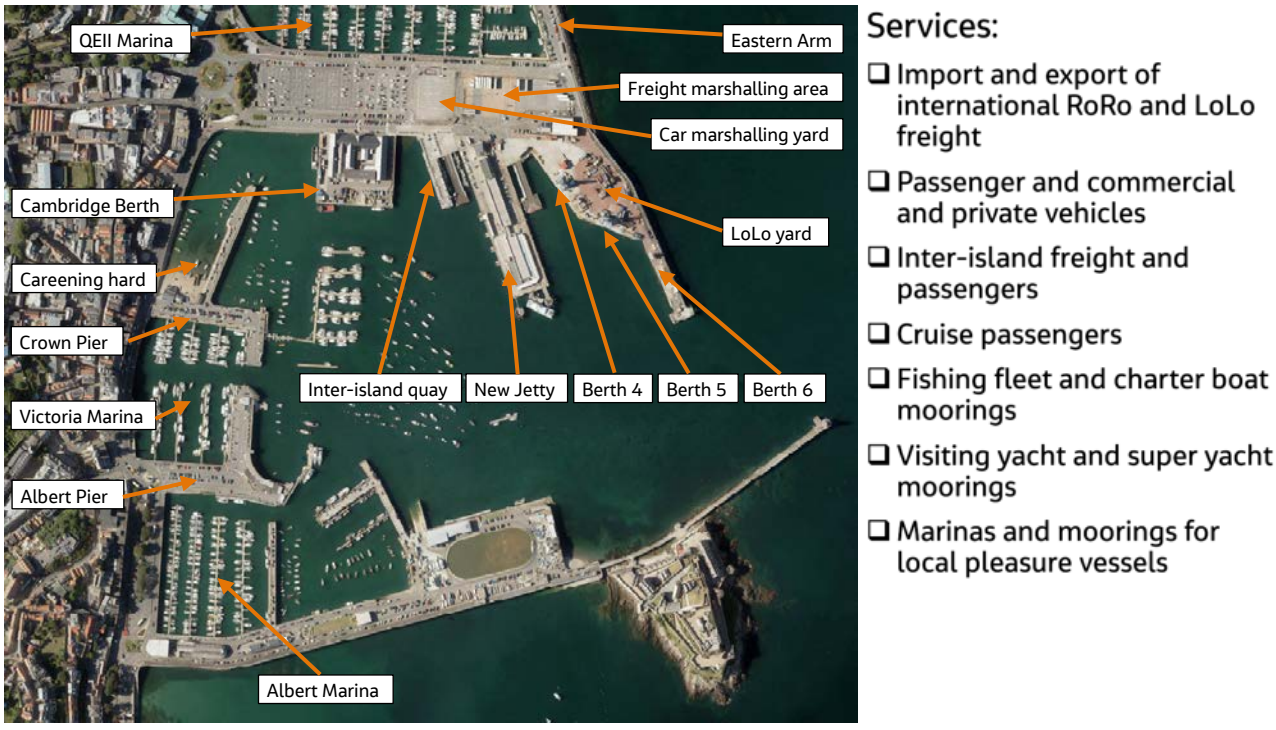


Figure 1.1: Key facilities and services in St Peter Port Harbour (image: Copyright States of Guernsey 2020)

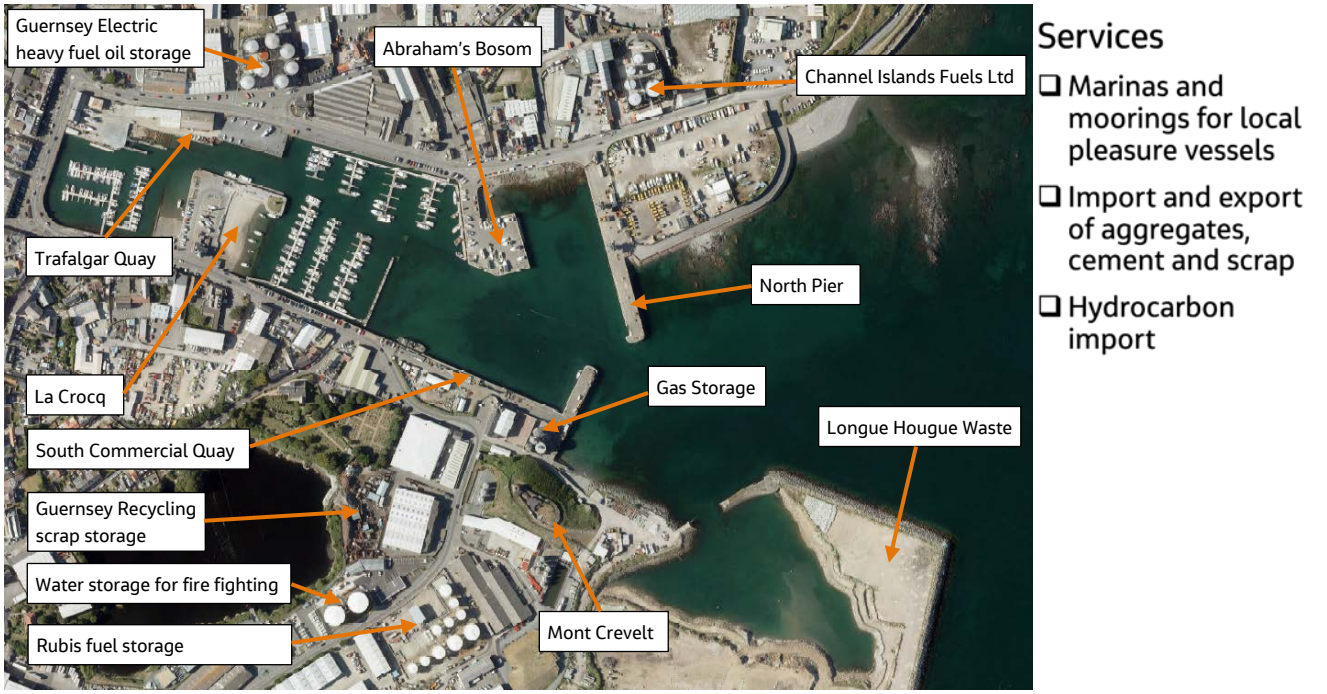


Figure 1.2: Key facilities and services in St Sampson's Harbour (image: Copyright States of Guernsey 2020)

1.2.2 Stakeholder engagement

We followed the Discovery phase with an initial engagement with port users to understand their existing operations, their plans/needs for the future and to get information/data from them to supplement that gained in the Discovery phase. A summary of the meetings is presented in the Guernsey Stakeholder Meetings Summary (B2382200-JAC-01-XX-CO-C-0001).

1.2.3 Demand forecast, spatial and facilities requirements

These activities helped to inform our demand forecast and development of the facility and spatial requirements needed to meet the demand. We reported these activities in the Demand Forecast (B2382200-JAC-02-XX-RP-C-0001) and Facilities and Spatial Requirements (B2382200-JAC-02-XX-RP-C-0002) reports respectively. Both the demand forecast and the spatial and facilities requirements were developed for each of the commercial and leisure sectors defined by Guernsey Harbour (Figure 1.3). Bulk liquids demand and associated spatial and facilities requirements were not assessed as these were and are still being developed as part of the ongoing Hydrocarbons Supply Programme. However, the options considered for the other commercial and leisure activities in this study will be influenced by the Hydrocarbons Supply Programme, this will be discussed further in the Output Phase report.

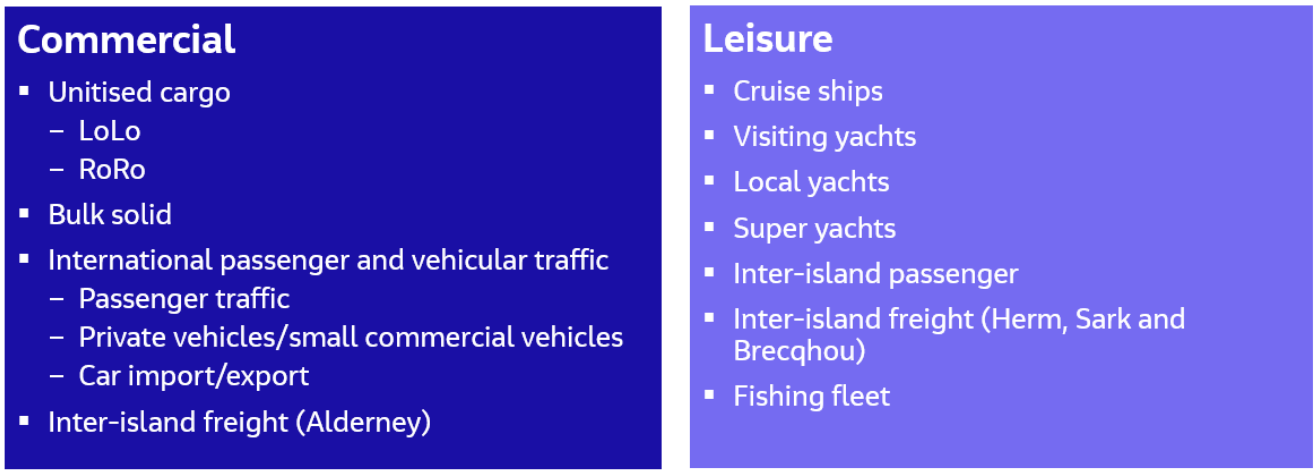


Figure 1.3: Port sectors as defined by Guernsey Harbours for evaluation of demand, spatial and facilities requirements

Note "International" passengers are those travelling outside of Bailiwick of Guernsey, while "Inter-island" passengers are those travelling between islands within the Bailiwick

The demand forecasts typically showed static demand or decline in demand over the forecast periods except under the high scenarios, in which demand increased in many sectors. The spatial and facilities requirements assessment showed that the space currently occupied by each sector was typically sufficient for current needs, but additional landside space was required by some sectors as illustrated in Table 1.1.

Sector	Historic trend (2008 - 2019)	2019 Demand	2050 Low demand forecast	2050 Base demand forecast	2050 High demand forecast	Additional facilities required 2050 high demand forecast
Unitised cargo (tonnage)	Decline (-0.8%)	200,000	193,100	218,900	303,000*	+3,000m^2 landside LoLo +1,600m^2 landside RoRo
Bulk liquid cargo (tonnage)	Decline (-2.5%)	75,000	42,000	52,200	69,300	New terminal and storage facility location or convert to unitised cargo
Bulk solid cargo (tonnage)	Decline (-6.2%)	41,000	0**	20,000	135,000	No further requirements
International passenger traffic (No.)	Decline (-0.6%)	288,000	236,000	236,000	528,000	+300m^2 passenger terminal, +1,000m^2 parking , 15m berth extension
Private vehicles and small	Decline	95,000	84,000	96,000	157,000	+1,650m^2 landside

Sector	Historic trend (2008 - 2019)	2019 Demand	2050 Low demand forecast	2050 Base demand forecast	2050 High demand forecast	Additional facilities required 2050 high demand forecast
commercial vehicles (No.)	(-0.5%)					
Car import and export (No.)	Decline (-7.5%)	3,570	345***	2,230	5,020	No further requirements
Inter-island passengers (No.)	Growth (+1.1%)	137,000	100,000	138,200	183,000	No further requirements
Inter-island freight (tonnage)	Growth (+0.49%)	9,800	7,170	11,500	19,950	No further requirements
Visiting yachts (No.)	Decline (-2.3%)	8,800	6,500	8,000	14,300	2 x shower and toilet blocks
Local yachts (No.)	Growth (+0.7%)	1,767	646****	1,760	2,110	+32,000m^2 +343 berths
Super yachts (No.)	Growth (+33%)	29	6	45	70	90m long 4.5m deep berth, 90m^2 fuelling area
Fishing & charter vessels (No.)	Decline (-2.6%)	120	46	118	149	+1,650m^2 marine area for +29 berths
Cruise*****	Growth (0.4%)	116,000	95,000	176,000	286,000	50m tender berth extension

* High forecast assumes bulk liquid cargo transfers to unitised

** Low forecast assumes demand is met by unitised cargo rather than bulk cargo

*** Low forecast assumes new cars imported directly by end customer and recognised car parc has longer life, so vehicle turnover is slower

**** Low forecast assumes same rate of decline in local yachts as per recent trends (2016-2019)

***** Figures for cruise includes initial estimate of recovery post COVID-19

Table 1.1: Summary of demand and facilities requirements

1.2.4 Assessment criteria

The assessment criteria set out below were developed to enable the evaluation of options. Each option is considered against each of the assessment criteria in a high-level, qualitative manner to help in comparing the relative merits of each option against criteria considered important to the project.

Assessment criteria	Comment
Meets base demand and spatial/facilities requirements in 2030	Our evaluation against this criterion relates only to the sectors which the option is designed to address
Meets base demand and spatial/facilities requirements in 2050 and could meet high/low demand	Our evaluation against this criterion relates only to the sectors which the option is designed to address
Limited environmental footprint	There is limited information about the marine environment around Guernsey, therefore this assessment considered only the scale and nature of options in terms of their likely relative environmental impact on the broad marine environment, in the immediate vicinity of the development, without considering local sensitive receptors or environmental designations in any detail It is recognised in the States of Guernsey Biodiversity Strategy (2015) that a lack of marine habitat and species data is a threat to the biodiversity of Guernsey's marine environment. In the context of this report, where the presence of important marine habitats (i.e. Maerl or Eelgrass beds) at a site is known, these have been flagged in the RAG status in each of the options to be considered. Where there is a lack of environmental data for a site, options will be flagged in accordance with the precautionary principle, in order to note that there is potentially an internationally important habitat at this site, but that this is yet to be determined
Meets or exceeds safety and reliability of existing facilities	We assumed that existing facilities (except hydrocarbon imports) meet or exceed Guernsey's safety needs. However, reliability in some sectors may not be adequate at existing facilities
Can be delivered in stages to allow flexibility and financial management	Where major capital works are required, consideration is given to whether the facilities could be developed or used in part before the whole/substantial part is constructed
Has synergy with other States of Guernsey infrastructure programmes	We considered (to the extent possible) the Hydrocarbons Supply Programme, Inert Waste Project, Coastal Defence in Belle Grève Bay, the Visit

Assessment criteria	Comment
	Guernsey Strategy and the Seafront Enhancement Area (SEA) Programme
Provides additional (non-harbour related) benefits to Guernsey	Principally this considered whether an option freed up space within the existing harbour areas that might be used for other purposes
Will have a neutral or positive impact on the built environment	A high-level assessment against considerations such as visual, noise or traffic impacts

Table 1.2: Assessment criteria

1.3 This report

A range of options were developed and evaluated to meet the demand forecast and the assessment criteria. The following sections of this report are summarised below:

- Section 2 - outlines the sectors and locations considered and their pros and cons
- Section 3 - presents options for the do nothing and do minimum scenarios at the existing harbour locations
- Section 4 - presents options for commercial activities at other locations
- Section 5 - presents options for leisure sectors

2. Sectors and locations

2.1 Port sectors

We used thirteen port sectors/functional elements, based on those identified in Figure 1.3 and used in the demand forecast, spatial and facilities requirements assessment:

- Unitised cargo – RoRo
- Unitised cargo – LoLo
- International passengers
- Inter-island freight
- Inter-island passengers
- Bulk liquids
- Bulk Solids
- Cruise ships (alongside berth)
- Cruise ship tenders
- Visiting yachts
- Local yachts
- Super yachts
- Fishing and charter

2.2 Locations

We considered six general locations on Guernsey's east coast based on the location of existing facilities, the requirements of the requête and the unsuitability of other more distant locations (Figure 2.1).

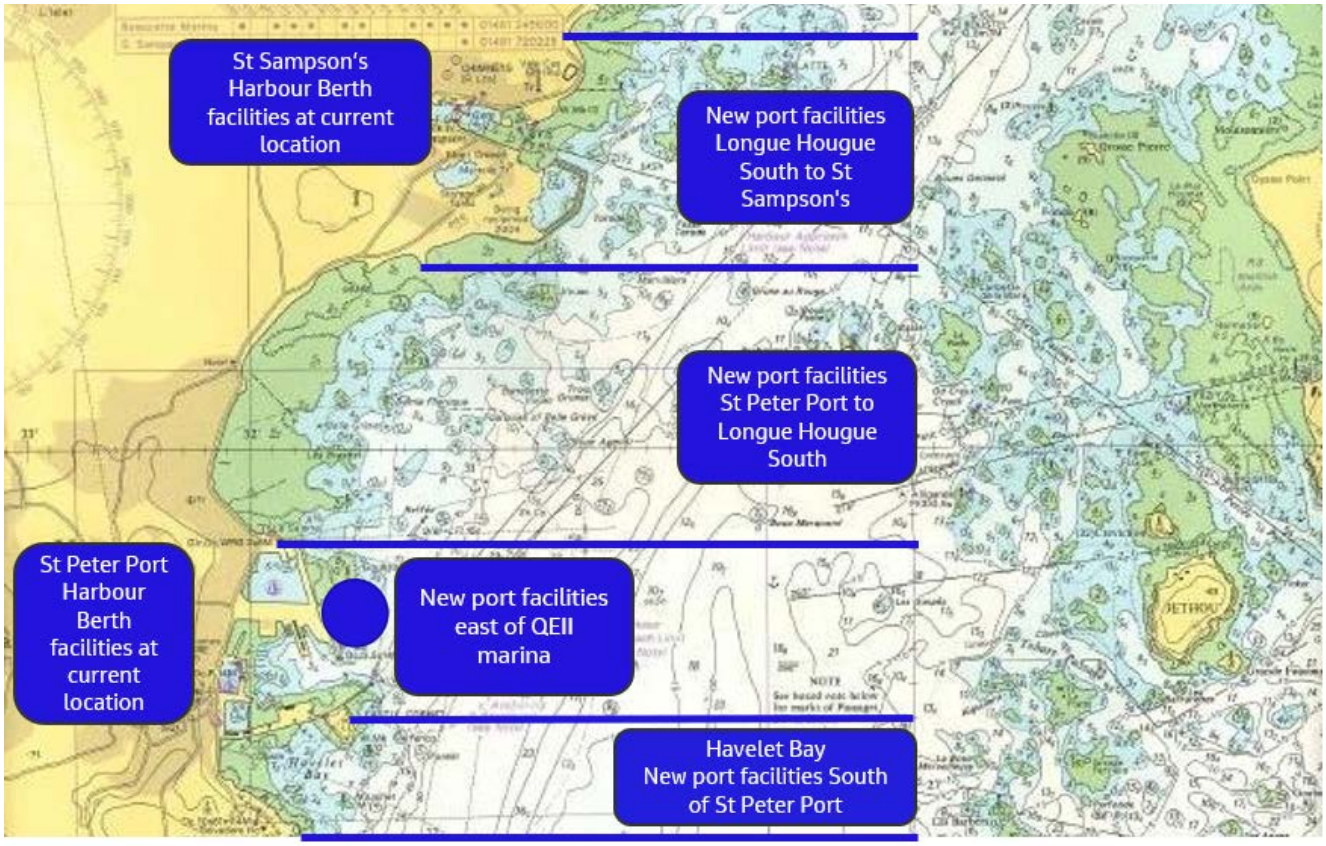


Figure 2.1: Six locations considered

During our previous work on both the Future Harbour Requirement Study (2010) and the Guernsey Hydrocarbons Supply Programme (GHSP Upload Location Study 684723-CH2-SOC-00-RP-0008) we used a similar grouping of locations on the east coast. Those locations and their boundaries were developed in consultation with the Guernsey Harbour Pilots when considering potential locations for port facilities and during

the Hydrocarbons Supply Programme; specifically, a hydrocarbons upload facility (fixed jetty or single point mooring). The advantages and disadvantages of different locations around the coast of Guernsey were also considered. Locations on the north, west and south coast were excluded, mostly due to adverse wind/wave exposure and a lack of natural deep water. Thus, we feel that all potentially viable locations for Guernsey's future harbour requirements are covered by the six zones illustrated in Figure 2.1.

2.3 Evaluation of locations

In the following figures we provide an overview of how locations perform against the assessment criteria and give a high-level summary of some of the pros and cons (opportunities / constraints) of each location. The summary does not differentiate between sectors or specific scenarios at these locations, as that is covered in more detail in later sections. This section tries to provide a simple overview of the key differences between locations when considered against the project's assessment criteria.

New port facilities Longue Hougue South to St Sampson's

Opportunities

-Synergies with Hydrocarbon Supply Programme

-Release space in St Peter Port

-Remove current constraints with a facility close to exisitng port

-Synergy with hydrocarbons, inert waste programme and SEA

Constraints

-Limited depth

-Navigational challenges

-Environmentally sensitive

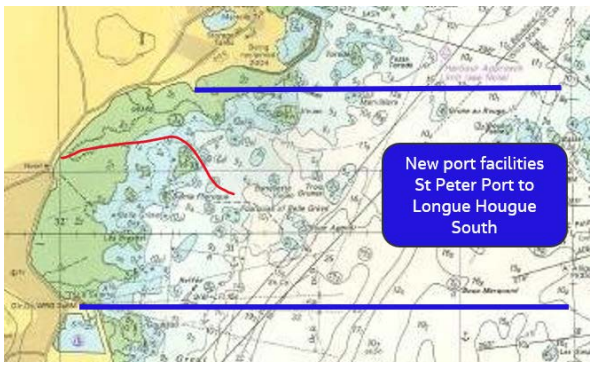
Assessment criteria	RAG	Notes
Meets demand in 2030 and 2050		New facilities could be developed to meet demand but likely at high cost
Environmental (natural)		Shallow water and unsheltered therefore all solutions likely to require dredging and breakwaters. Known areas of maerl beds offshore
Safety and reliability		Can improve safety and reliability by providing deeper berths, however navigation to new facility will be subject to high cross currents. Adverse effect if leisure sectors are relocated as they will be further away from town
Financial flexibility (delivering in stages)		Most solutions require construction of a breakwater and need to be built in a single phase
Synergies with other programmes		Hydrocarbons – potentially could be combined with landisde facility requirements Inert Waste - possible to merge with development at Longue Hougue South SEA – frees up space in St Peter Port, potentially allowing "SEA" sectors to grow Transport and tourism – adverse effect if leisure sectors are relocated as they will be further away from town
Enhances built environment		Positive if commercial activities moved out of existing locations, but local visual impact may be adverse

Table 2.1: Characteristics of locations north of St Peter Port Harbour – Longue Hougue South to St Sampson's

New port facilities St Peter Port Harbour to Longue Hougue South

Opportunities

- Synergies with Hydrocarbon Supply Programme
- Release space in St Peter Port
- Large area available



Constraints

- Limited depth
- Exposed to waves and currents
- Long sea outfall
- Environmentally sensitive
- Distance landfall
- Away from town center for reacreational users

Assessment criteria	RAG	Notes
Meets demand in 2030 and 2050		New facilities could be developed to meet demand but likely at high cost
Environmental (natural)		Shallow water and unsheltered therefore all solutions likely to require dredging and breakwaters along a coastline that is an 'Area of Biodiversity Importance'
Safety and reliability		Can improve safety and reliability by providing deeper berths than existing however sectors are moved further away from ultimate destinations
Financial flexibility (delivering in stages)		Most solutions require dredging and construction of a breakwater and need to be built in a single phase
Synergies with other programmes		Hydrocarbons – potentially could be combined with landside and marine facility requirements SEA – frees up space in St Peter Port, potentially allowing "SEA" sectors to grow Transport and tourism – adverse effect if leisure sectors are relocated as they will be further away from town
Enhances built environment		Positive if commercial activities moved out of existing locations, but local visual impact to Belle Greve Bay

Table 2.2: Characteristics of locations north of St Peter Port Harbour – St Peter Port to Longue Hougue South.

As shown above, locations north of St Peter Port Harbour typically had amber ratings against most criteria.

New port facilities east of QEII marina

Opportunities

- Naturally deep water
- Merge with SEA and Tourism strategy
- Close to existing port facilities

Constraints

- Exposed to waves and currents
- Potentially environmentally sensitive

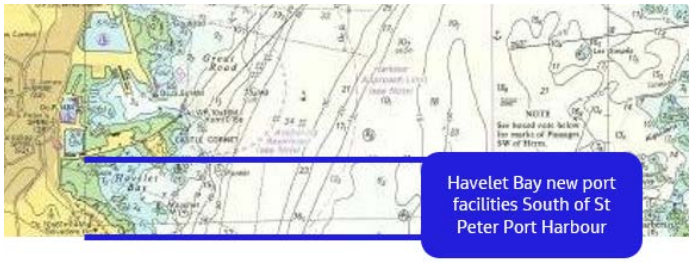
Assessment criteria	RAG	Notes
Meets demand in 2030 and 2050		New facilities could be developed to meet demand but likely at high cost
Environmental (natural)		Will require construction of breakwaters but due to natually deep water extensive dredging may be avoided/reduced. Potentially environmentally sensitive area
Safety and Reliability		Improved navigation and deeper berths. New facilities can be designed to improve safety and reliability
Financial flexibility (delivering in stages)		Most solutions require some dredging and construction of a breakwater and need to be built in a single phase
Synergies with other programmes		Hydrocarbons – Space allowance for hydrocarbons to be transferred through unitised cargo SEA – Frees up space in St Peter Port Harbour, potentially allowing "SEA" sectors to grow Transport and tourism – Increase in space for leisure sectors close to St Peter Port
Enhances built environment		Local visual impact from the land and approaching St Peter Port

Table 2.3: Characteristics of location east of St Peter Port Harbour

Havelet Bay new port facilities south of St Peter Port Harbour

Opportunities

- Can separate commercial and non-commercial activities



Constraints

- Exposed to waves and currents
- Environmentally sensitive

Assessment criteria	RAG	Notes
Meets demand in 2030 and 2050		New facilities could be developed to meet demand for some sectors but likely at high cost
Environmental (natural)		Will require construction of breakwaters and dredging in a environmentally sensitive area
Safety and reliability		New facilities in some sectors can be designed to improve safety and reliability
Financial flexibility (delivering in stages)		Most solutions require some dredging and construction of a breakwater and need to be built in a single phase
Synergies with other programmes		SEA – frees up some space in St Peter Port Harbour, potentially allowing "SEA" sectors to grow Transport and tourism – increase in space for leisure sectors close to St Peter Port
Enhances built environment		Provides new marina close to St Peter Port town, interacts with electricity cable landfall

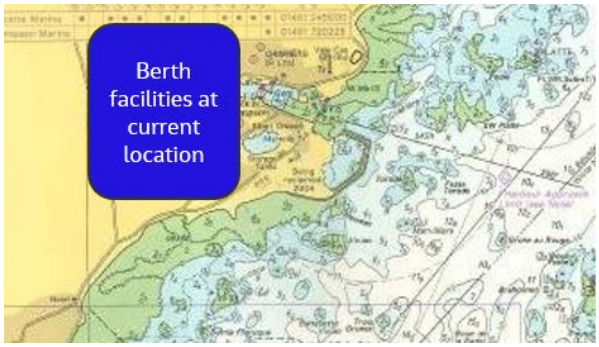
Table 2.4: Characteristics of location south of St Peter Port Harbour

When compared with options to the north of St Peter Port Harbour, options to the east of St Peter Port Harbour have fewer constraints and more opportunities, leading to more green assessments. While Havelet Bay is more comparable to options north of St Peter Port Harbour with more constraints than opportunities.

Retain berth facilities at St Sampson's Harbour

Opportunities

- Can build some solutions in phases
- Existing infrastruture in place
- Sheltered



Constraints

- Limited depth
- Limited quay space
- Navigational access issues
- Road access constraints
- Hydrocarbons storage and upload health and safety issues

Assessment criteria	RAG	Notes
Meets demand in 2030 and 2050		Do Nothing/Do Minimum options could meet demand for some sectors
Environmental (natural)		Due to limited construction works/works being carried out in an existing port environment impacts are limited
Safety and reliability		Current hydrocarbons and upload facilities do not meet Hydrocarbons Supply Programme critical success factors
Financial flexibility (delivering in stages)		New vessels and new storage required unless hydrocarbons convert to unitised supply
Synergies with other programmes		No alignment with other programmes
Enhances built environment		No significant change to the existing environment

Table 2.5: Characteristics of existing facilities at St Sampson's Harbour

Retain berth facilities at St Peter Port Harbour

Opportunities

- Can build some solutions in phases
- Existing infrastruture in place
- Sheltered
- Space to improve local and visiting yachts

Constraints

- Not full tidal access for some sectors
- Conflicts between commercial and non-commercial sectors

Assessment criteria	RAG	Notes
Meets demand in 2030 and 2050		Do Nothing/Do Minimum options could meet demand for sectors
Environmental (natural)		Due to limited construction works/works being carried out in an existing port environment impacts are limited
Safety and reliability		Do Minimum options could improve safety and realiability
Financial flexibility (delivering in stages)		Do Minimum will likely have relatively low cost and may be developed in stages
Synergies with other programmes		No alignment with other programmes
Enhances built environment		No significant change to the existing environment

Table 2.6: Characteristics of existing facilities at St Peter Port Harbour

The existing facilities at St Peter Port Harbour generally rated well, but St Sampson's Harbour scored less well due to issues with navigation and arrangements for hydrocarbons upload and storage.

2.4 Location conclusion

As a result of the location analysis, consideration was not given to the development of new facilities between St Peter Port Harbour and the southern part of Belle Grève Bay. All other locations have been included in the scenarios developed.

In the following sections we outline several harbour development options under three broad themes:

- Keep commercial sectors at existing locations – Section 3
- New locations for commercial sectors – Section 4
- Improved provision for leisure sectors – Section 5

Each scenario and option is summarised in the following sections. Further details are provided in Appendix B - Technical Notes.

3. Keep commercial sectors at existing locations

3.1 Scenario 0: Do Nothing

Here we describe the current port facilities and assess how they meet the assessment criteria including the spatial and facilities requirements for the future demand scenarios.

3.1.1 Option 0.1: Do Nothing at St Peter Port Harbour

Key features

- Commercial facilities provided for RoRo, LoLo, international and Inter-island passengers and inter-island freight
- Leisure facilities provided for cruise tender access, local and visiting yachts, fishing and charter sectors
- Some capacity to handle super yachts, but no dedicated berth or refuelling facilities
- Harbour offices
- Variety of local businesses housed in office/workshop/retail spaces
- Car parking

Cost estimate

There will be ongoing maintenance costs to keep these facilities operating over the life of the forecast period. However, in line with the cost estimates for the other options, these are excluded from this analysis. There is no capital cost associated with this option.

Pros and cons

Pros	Cons
Existing facilities cope with existing demand	Queues and bottlenecks can occur in commercial and leisure sectors at peak times and may be limiting demand in some sectors
Existing facilities are close to centre of St Peter Port	ISPS Security arrangements for international trade/tourism are complex and non-optimal
	Many of the future spatial and facilities requirements are not met under the high scenario (see table below)

Table 3.1: Pros and Cons for Option 0.1

Compliance with spatial and facilities requirements

In Appendix A we present a summary table showing how Option 0.1 complies with the spatial and facilities requirements described in the Spatial and Facilities Requirements Report B2382200-JAC-02-XX-RP-C-0001 and Demand Forecast B2382200-JAC-02-XX-RP-C-0002. We consider each sector independently and assume each needs to provide for the peak demand forecast from present day to 2050.

Compliance with assessment criteria

Compliance of the Do Nothing option is assessed against the assessment criteria using a Red, Amber, Green (RAG) approach as illustrated below. As there are no new facilities, the environmental and flexibility assessment criteria are met. As the demand for some sectors does not increase over time these assessment criteria are partly met.

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		Meets requirements for some sectors
Meets base demand/facilities requirements by 2050 and could meet high/low demand		Fails requirements for several sectors
Safety reliability, environment, flexibility		
Improves safety and reliability over existing facilities		Yes, for some sectors
Limited environmental footprint		Existing
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Existing
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Neutral
Positive impact on built environment		Existing

Table 3.2: Option 0.1 compliance with assessment criteria

3.1.2 Option 0.2: Do Nothing at St Sampson's Harbour

Key features

- All bulk liquids imported through the facility with two drying berths (shared with bulk solids), dedicated manifolds and adjacent hydrocarbons storage and distribution facilities
- All bulk solids currently imports/exported through two drying berths (shared with bulk liquids)
- Tidal restricted access for bulk vessels and Not Always Afloat But Safely Aground (NAABSA) capable bulk vessels required
- Marina with 331 berths
- Quayside parking

Cost estimate

There will be ongoing maintenance costs to keep these facilities operating over the life of the forecast period. However, in line with the cost estimates for the other options, these are excluded from this analysis. There is no capital cost associated with this option.

Pros and cons

Pros	Cons
Commercial activities are away from St Peter Port	Commercial vessel marine access severely restricted
Existing bulk liquids storage facilities are nearby	Safety of hydrocarbons storage and upload does not meet Hydrocarbons Programme critical success factors
Power station which uses hydrocarbons is nearby	Existing bulk liquid vessels will be retired within the planning horizon for this project
Local yachts have alternative location to St Peter Port	

Table 3.3: Pros and Cons for Option 0.2

Compliance with spatial and facilities requirements

In Appendix A we present a summary table showing how Option 0.2 complies with the spatial and facilities requirements described in the Spatial Requirement Study Report (B2382200-JAC-02-XX-RP-C-0002) and Demand Forecast (B2382200-JAC-02-XX-RP-C-0001). We consider each sector independently and assume each needs to provide for the peak demand forecast from present day to 2050. We present first the commercial sectors and then the leisure sectors at St Sampson's Harbour.

This project does not make any assessment of the requirements for bulk liquids as these were assessed in the Hydrocarbons Supply Programme. We have therefore used the requirements developed in that study to provide a high-level assessment of compliance of the existing facilities at St Sampson's Harbour.

Compliance with assessment criteria

Do Nothing option is measured against the assessment criteria using the RAG approach illustrated below. As there are no new facilities, the environmental and flexibility assessment criteria are met. As the demand for some sectors does not increase over time, these assessment criteria are partly met. Safety/ reliability is flagged as red, as the existing facilities fail to meet the Hydrocarbons Supply Programme assessment criteria for bulk liquids. The navigation approach and access for all bulk vessels is also difficult and tidally restricted.

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		Fails for bulk liquids
Meets base demand/facilities requirements by 2050 and could meet high/low demand		Fails for bulk liquids
Safety, reliability, environment and flexibility		
Improves safety and reliability over existing facilities		Fails Hydrocarbons assessment criteria, tidally restricted difficult navigation for all bulk
Limited environmental footprint		Existing
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Existing
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Neutral
Positive impact on built environment		Existing

Table 3.4: Option 0.2 compliance with assessment criteria

3.2 Scenario 1: Do Minimum at St Peter Port Harbour for commercial activities

Three options have been developed, retaining all commercial operations within the existing port area at St Peter Port. In this scenario we assume bulk solids remain at St Sampson's Harbour. We assume that bulk liquids are accommodated through the recommendations in the Hydrocarbons Supply Programme either by provision of a multi-buoy mooring off the Longue Hougue reclamation or through conversion to unitised cargo.

3.2.1 Option 1.1: Minimum changes at St Peter Port Harbour to meet requirements

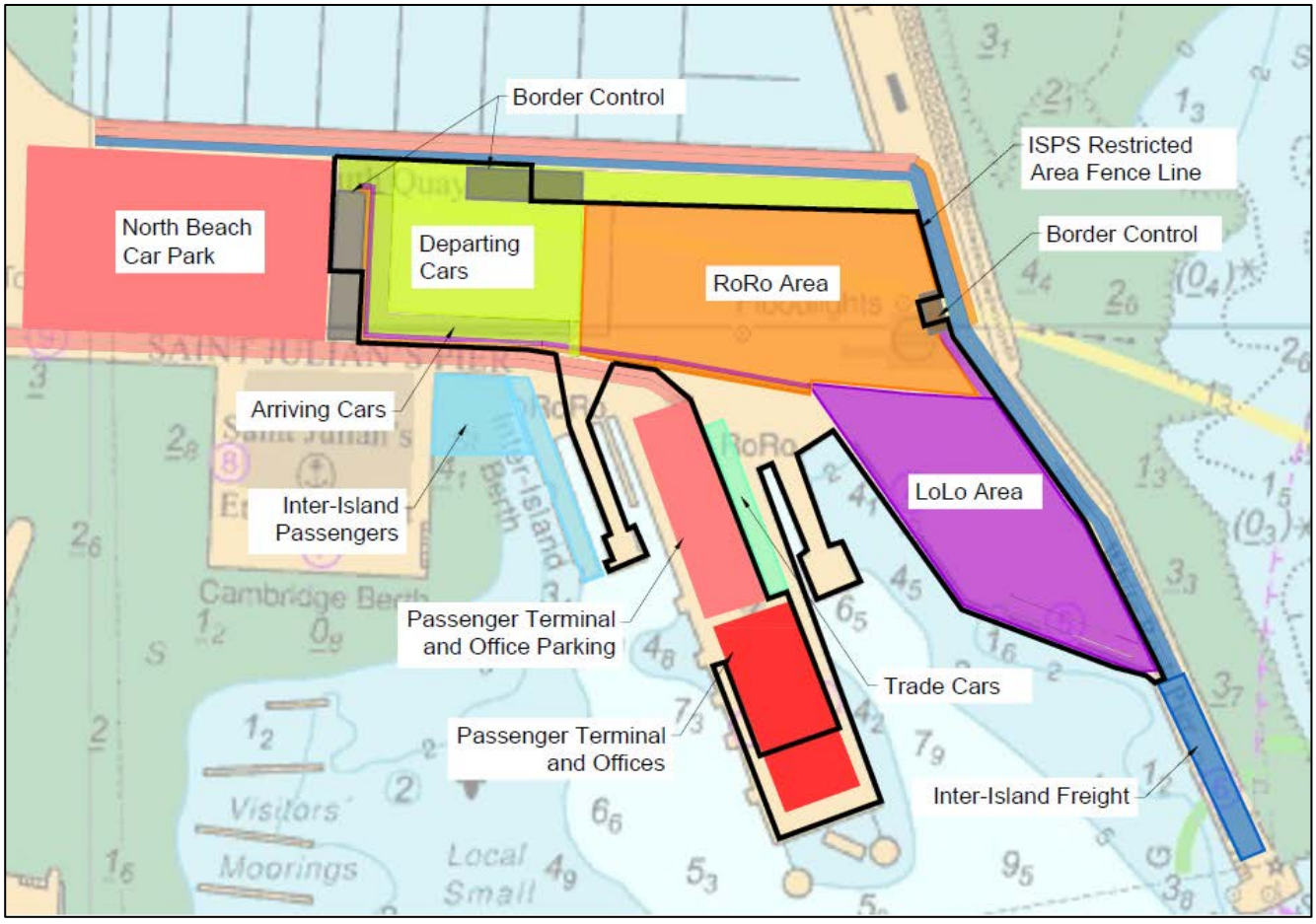


Figure 3.1: Option 1.1 layout

Key features

- Landside areas to accommodate future spatial requirements including the high demand scenario
- Extended building for international passenger terminal, parking spaces and drop/off areas for international passengers on the New Jetty to cover requirements of the high demand scenario
- Relocated Customs and border control area to improve traffic flow
- Provision of extra lanes for access roads to reduce town and port congestion
- Inter-island freight and passenger areas to remain unaltered
- LoLo and RoRo areas remain adjacent to enable fluctuation of market share between each other and the increased demand

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £21m or up to £35m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
Meets all commercial demand scenarios and spatial and facilities requirements for sectors currently using the port	Requires relocation of some (non-port) businesses currently on the New Jetty to accommodate new passenger terminal and blue economy building
Improves and simplifies ISPS boundaries and interfaces	ISPS around RoRo ramp remains complex. Traffic to passenger terminal requires ramp to go over ISPS boundary.
Improves traffic circulation inside the port with potential to improve local traffic outside the port at peak periods	North Beach car park area is reduced by 5,000m^2 (~45%) to accommodate layout changes
Provides improved flow through Customs and Excise facilities	

Table 3.5: Pros and Cons for Option 1.1

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		Meets requirements for existing commercial sectors in the Port
Meets base demand/facilities requirements by 2050 and could meet high/low demand		Meets requirements for existing commercial sectors in the Port
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		Improves reliability and safety
Limited environmental footprint		Existing
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Existing can be developed in stages
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Neutral has no positive benefit
Positive impact on built environment		Comparatively low visual impact

Table 3.6: Option 1.1 compliance with assessment criteria

3.2.2 Option 1.2: Optimised St Peter Port layout to improve efficiency and security

Option 1.2 has a variant, Option 1.2a. The main difference between these variants is that in Option 1.2 non-port businesses currently located on Cambridge Berth are assumed to be relocated elsewhere, whereas in variant Option 1.2a, the space is provided by an extension to the Cambridge Berth.

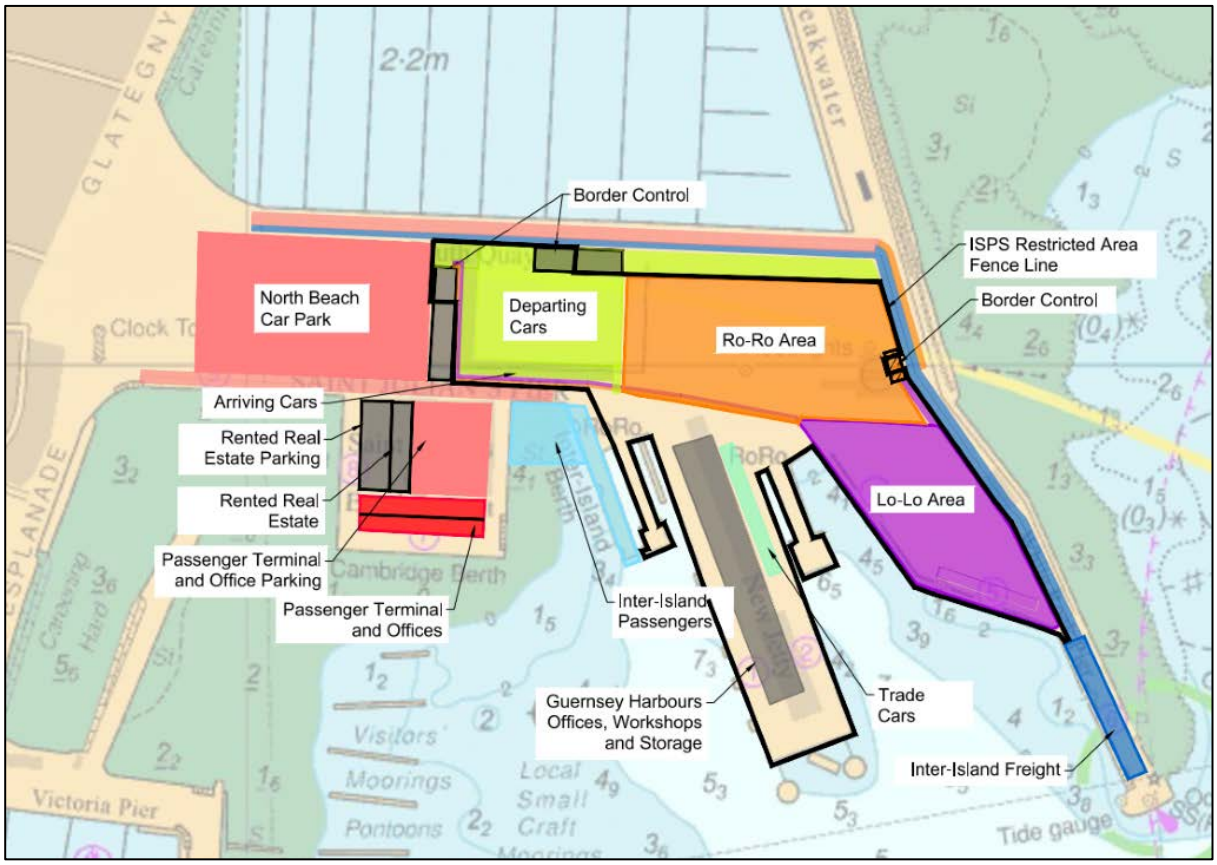


Figure 3.2: Option 1.2 layout

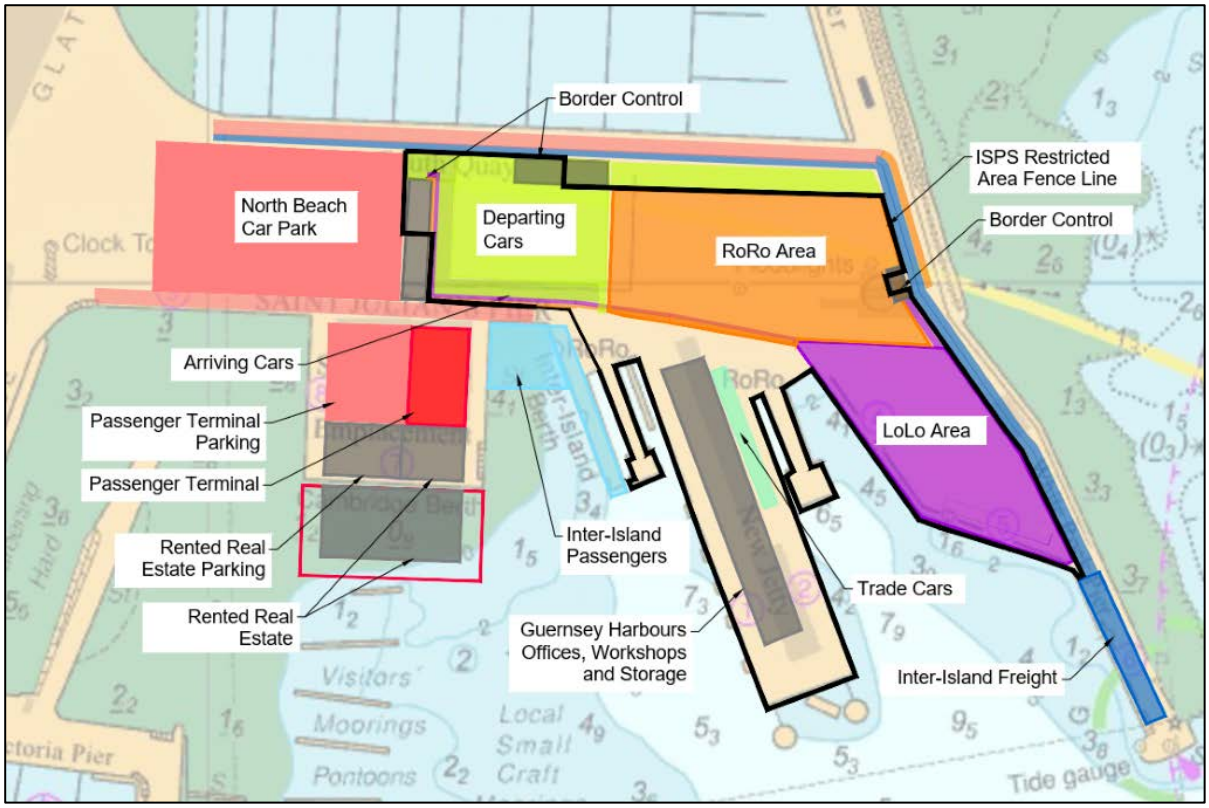


Figure 3.3: Option 1.2a layout

Key features

- Landside areas to accommodate future spatial requirements including the high demand scenario
- Demolition of existing buildings on Cambridge Berth to make space for port reconfiguration
- Provision of new buildings for international passengers' terminal, parking spaces and drop/off areas for international passengers on Cambridge berth to accommodate high scenario requirements
- Requires extra passenger transport facility (from terminal to vessels), vehicles and extra personnel
- In variant only - extension to Cambridge Berth to accommodate additional rented real estate
- Harbour Offices and maintenance facilities to be relocated on the New Jetty
- Provision of extra lanes for access roads to improve traffic circulation
- Inter-island freight and passengers' areas to remain unaltered
- LoLo and RoRo areas remain adjacent to enable fluctuation between each other and increased demand

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £27m or up to £45m including the Green Book recommended 66% optimism bias for this stage of concept definition, (for Option 1.2 only, excluding extension to Cambridge Berth).

Pros and cons

Pros	Cons
Meets all commercial demand scenarios and spatial and facilities requirements	Requires relocation of some/all (non-port) businesses currently on the New Jetty to accommodate new harbour offices moved from Cambridge Berth
Improves and simplifies ISPS boundaries and interfaces to provide one contiguous area	Option 1.2 requires relocation of all (non-port) businesses currently on the Cambridge Berth to a new (unidentified) location [Option 1.2a provided space for these facilities within the port]
Puts Harbour Offices inside the ISPS	North Beach car park area is reduced by 5,000m^2 (~45%) to accommodate layout changes
Improves traffic circulation inside the port with potential to improve local traffic outside the port at peak periods	Requires extra passenger transport facility (from terminal to vessels), vehicles and extra personnel. This however could be negated with a passenger access structure between the terminal and the vessels
Provides additional parking for inter-island passenger drop off	

Table 3.7: Pros and Cons for Option 1.2

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		Meets requirements for existing commercial sectors in the Port
Meets base demand/facilities requirements by 2050 and could meet high/low demand		Meets requirements for existing commercial sectors in the Port
Safety reliability , environment and flexibility		
Improves safety and reliability over existing facilities		Improves reliability and safety
Limited environmental footprint		Existing
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Existing can be developed in stages
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Neutral has no positive benefit
Positive impact on built environment		Comparatively low visual impact

Table 3.8: Option 1.2 compliance with assessment criteria

3.2.3 Option 1.3: Alternative St Peter Port layout to improve efficiency and security

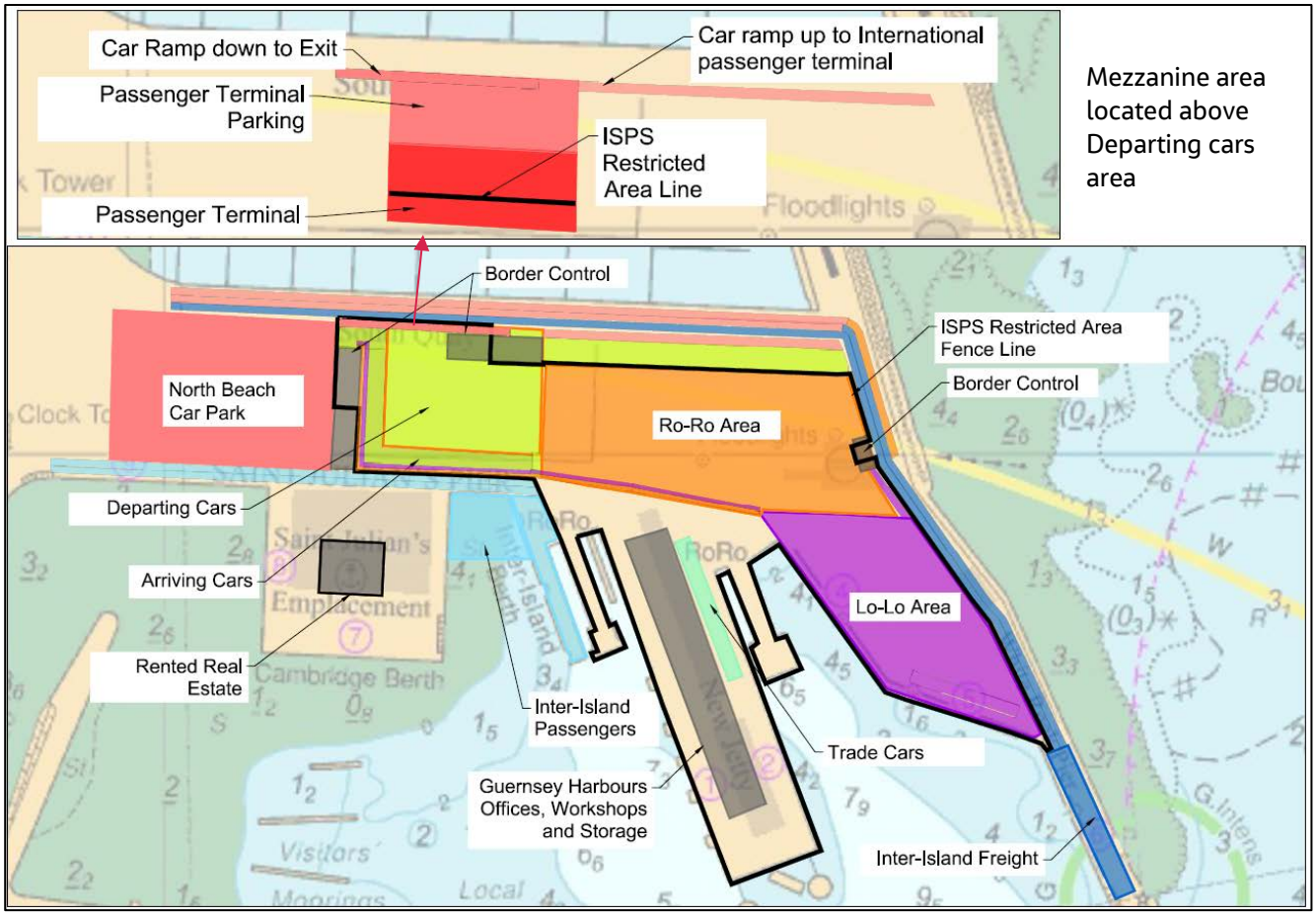


Figure 3.4: Option 1.3 layout

Key features

- Landside areas to accommodate future spatial requirements including the high demand scenario
- Demolition of existing buildings on Cambridge Berth to make space for port reconfiguration
- Provision of new buildings for international passengers' terminal (above car marshalling area), parking spaces and drop/off areas for international passengers on Cambridge berth to accommodate high scenario requirements
- Harbour Offices and maintenance facilities to be relocated on the New Jetty
- Provision of extra lanes for access roads to improve traffic circulation
- Inter-island freight and passengers' areas to remain unaltered
- LoLo and RoRo areas remain adjacent to enable fluctuation between each other and increased demand

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £32m or up to £53m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
Meets all commercial demand scenarios and spatial and facilities requirements	Requires relocation of some/all (non-port) businesses currently on the New Jetty to accommodate new harbour offices moved from Cambridge Berth
Improves and simplifies ISPS boundaries and interfaces to provide one contiguous area	Requires relocation of all (non-port) businesses currently on the Cambridge Berth to a new (unidentified) location
Puts Harbour Offices inside the ISPS	North Beach car park area is reduced by 6,000m^2 (~55%) to accommodate layout changes
Improves traffic circulation inside the port with potential to improve local traffic outside the port at peak periods	International passenger terminal building is built above the proposed car marshalling yard
Provides additional parking for inter-island passenger drop off	

Table 3.9: Pros and Cons for Option 1.3

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		Meets requirements for existing commercial sectors in the Port
Meets base demand/facilities requirements by 2050 and could meet high/low demand		Meets requirements for existing commercial sectors in the Port
Safety reliability , environment and flexibility		
Improves safety and reliability over existing facilities		Improves reliability and safety
Limited environmental footprint		Existing
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Existing can be developed in stages
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Mostly neutral, some space on St Julians Emplacement released for other uses
Positive impact on built environment		Higher visual impact (than other Do Minimum options)

Table 3.10: Option 1.3 compliance with assessment criteria

4. New location for commercial sectors

4.1 Scenario 2: Move St Peter Port commercial activities to new facility East of QE II marina

We have developed two options for this scenario and again assumed that bulk solids operations continue unchanged at St Sampson's Harbour. We assume that bulk liquids are accommodated through the recommendations in the Hydrocarbons Supply Programme either by provision of a multi-buoy mooring off the Longue Hougue reclamation or through conversion to unitised cargo.

4.1.1 Option 2.1: E of QE II Marina no dredging

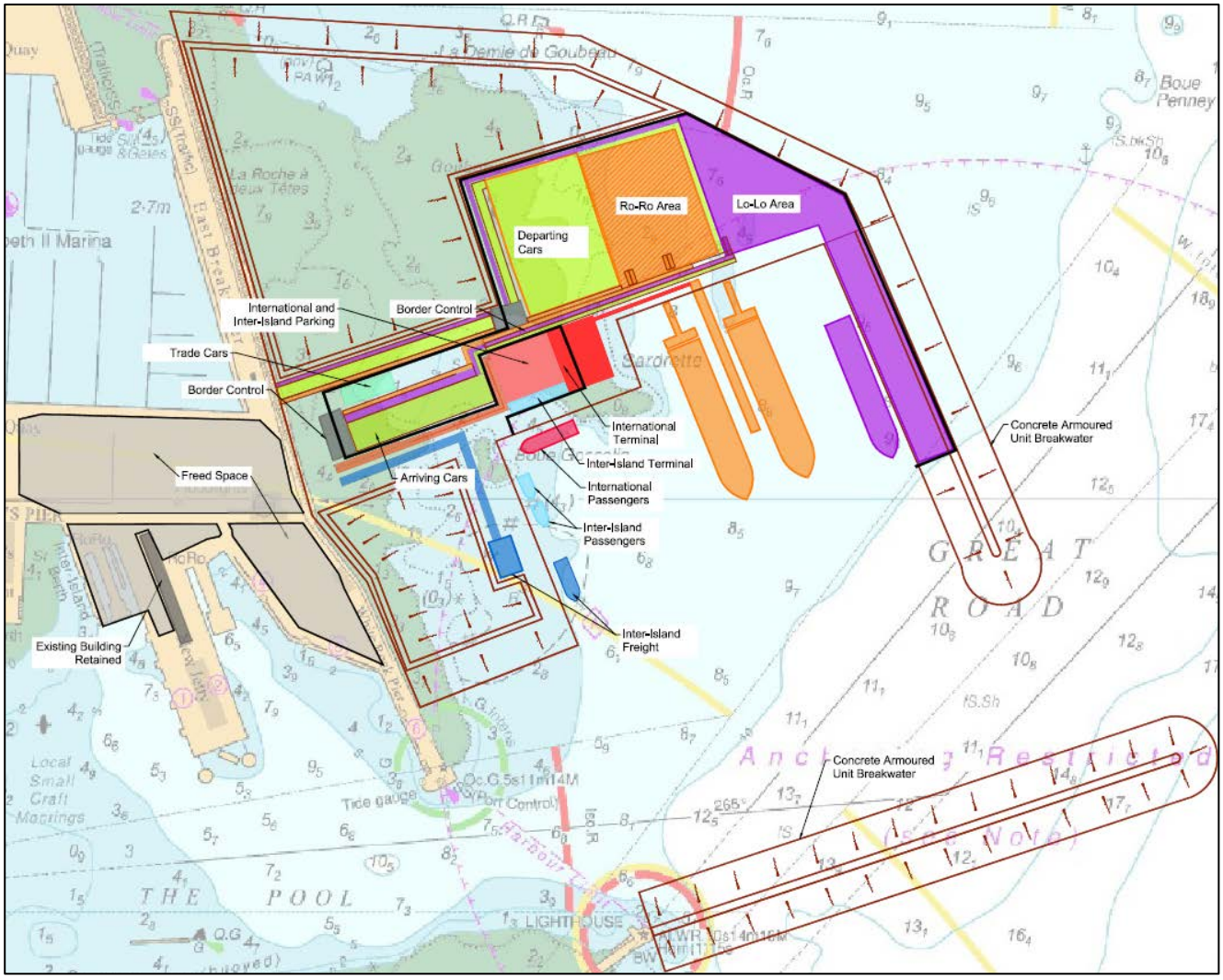


Figure 4.1: Option 2.1 layout

Key features

- Unitised cargo, international passengers, inter-island passengers and inter-island freight facilities are provided to accommodate future spatial requirements including the high demand scenario
- Customs and border control are relocated to improve efficiency
- New breakwaters are constructed to provide shelter for the new berths
- Land reclamation and breakwaters are used to avoid the need for dredging
- New quays, quay furniture, rock revetments, buildings, road accesses are provided
- Unused area of Land reclamation can be left unfilled but provides potential for inert waste
- Protected side of breakwater used for berthing

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £217m or up to £423m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
Provides a new port facility designed to meet current and future needs	Requires extensive capital works
Meets all commercial demand scenarios and spatial and facilities requirements	Covers some of the existing granite faced harbour walls with a new quay
Improves and simplifies ISPS boundaries and interfaces to provide one contiguous area	Impact on built environment in terms of views including approaches to St Peter Port
Puts Harbour Offices inside the ISPS	Limited/unknown environmental data, therefore unknown environmental impact.
Improves traffic circulation inside the port with potential to improve local traffic outside the port at peak periods	Potential for a high traffic impact in main town centre during construction phase, this will require further logistics review
Frees up 30,000m^2 space within the existing port for potential redevelopment	
Provides potential area for future inert waste landfill site	

Table 4.1: Pros and Cons for Option 2.1

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		Meets requirements for selected commercial sectors
Meets base demand/facilities requirements by 2050 and could meet high/low demand		Meets requirements for selected commercial sectors
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		Improves reliability and safety
Limited environmental footprint		Requirement for significant reclamation and breakwater construction
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Cannot easily be developed in stages
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		May work with proposed inert waste scheme at same location, subject to timing, will free up some space in St Peter Port Harbour
Positive impact on built environment		Will have a high visual impact, including approaches for visitors

Table 4.2: Option 2.1 compliance with assessment criteria

4.1.2 Option 2.2: E of QE II Marina most compact layout

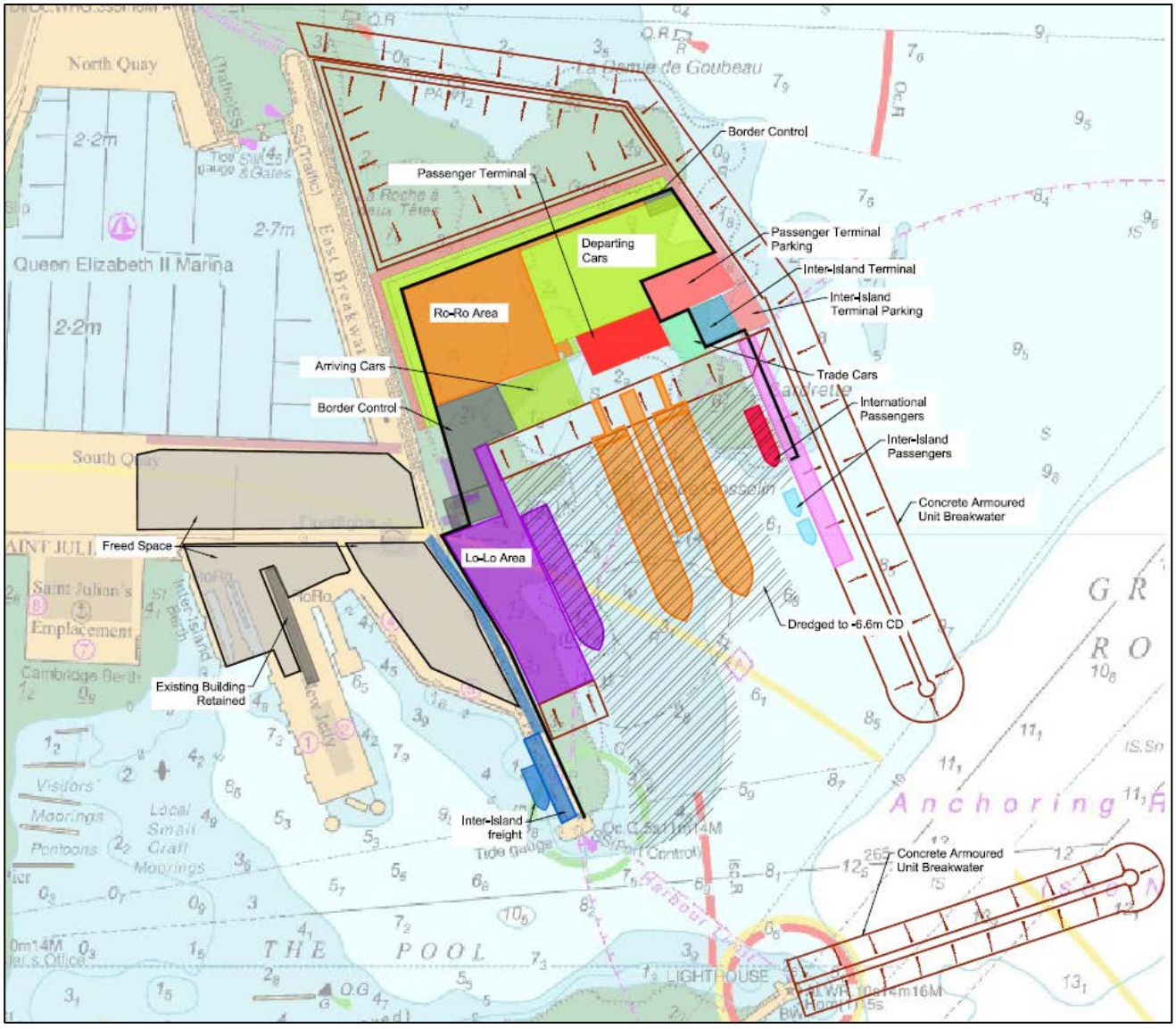


Figure 4.2: Option 2.2 layout

Key Features

- New unitised cargo, international passengers, inter-island passengers facilities are provided to accommodate future spatial requirements including the high demand scenario
- Customs and border control are relocated to improve efficiency
- New breakwaters are constructed to provide shelter for the new berths
- Rock dredging required to provide sufficient water depth
- New quays, quay furniture, rock revetments, buildings, road accesses are provided
- Unused area of land reclamation can be left unfilled but provides potential for inert waste
- Protected side of breakwater used for berthing
- Inter-island freight remains at current location

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £217m or up to £360m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
Provides a new port facility designed to meet current and future needs	Requires extensive capital works and significant rock dredging
Moves commercial activities further from historic town centre and port	Covers some of the existing historic granite faced harbour walls with a new quay
Meets all commercial demand scenarios and spatial and facilities requirements	Limited/unknown environmental data, therefore unknown environmental impact
Improves and simplifies ISPS boundaries and interfaces to provide one contiguous area	Potential for a high traffic impact in main town centre during construction phase, this will require further logistics review
Puts Harbour Offices inside the ISPS	Impact on built environment in terms of views including approaches to St Peter Port
Improves traffic circulation inside the port with potential to improve local traffic outside the port at peak periods	
Frees up 30,000m^2 space within the existing port for potential redevelopment	
Provides potential area for future inert waste landfill site	

Table 4.3: Pros and Cons for Option 2.2

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		Meets requirements for selected commercial sectors
Meets base demand/facilities requirements by 2050 and could meet high/low demand		Meets requirements for selected commercial sectors
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		Improves reliability and safety
Limited environmental footprint		Requirement for significant reclamation and breakwater construction
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Cannot easily be developed in stages
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		May work with proposed inert waste scheme at same location, subject to timing. Will free up some space in St Peter Port Harbour
Positive impact on built environment		Will have high visual impact, including approaches for visitors

Table 4.4: Option 2.2 compliance with assessment criteria

4.2 Scenario 3: New port for commercial sectors adjoining Longue Hougue South

These options represent the development of a new port facility adjoining the proposed Longue Hougue South inert waste reclamation site. These options could benefit from the proposed inert waste site (depending on relative development timescales) and allow the movement of some or all commercial activities out of St Peter Port and St Sampson's Harbour. In the first option, most commercial activities (LoLo, RoRo, bulk and international passengers) are moved from St Peter Port Harbour and St Sampson's Harbour, while in the second option a more limited set of sectors (LoLo and Bulk only) are provided for.

4.2.1 Option 3.1: Most commercial sectors transferred to new port adjoining Longue Hougue South

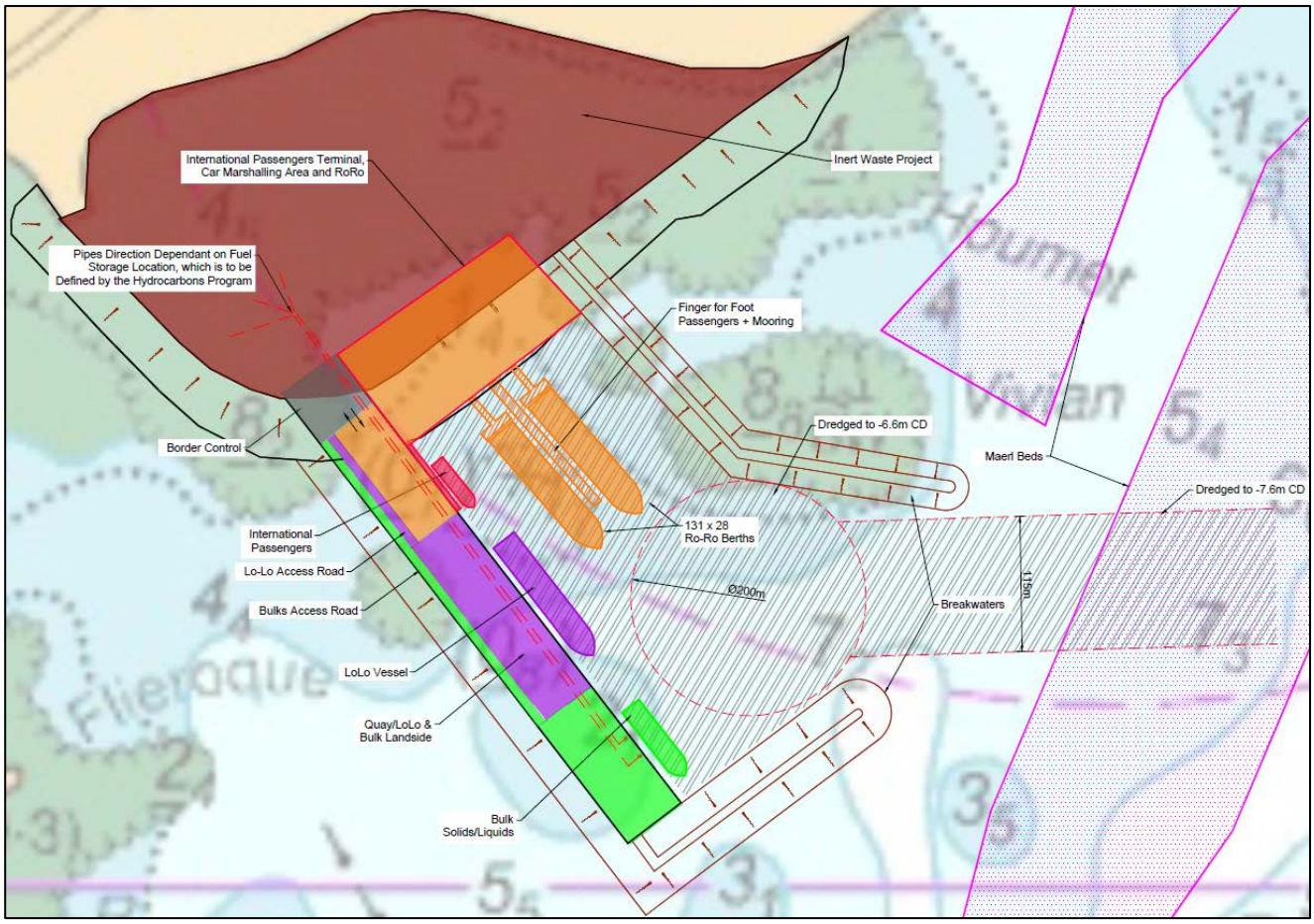


Figure 4.3: Option 3.1 layout

Key features

- New unitised cargo, international passengers, bulk solids and liquids facilities are provided adjacent Longue Hougue South to accommodate future spatial requirements including the high demand scenario
- Outline plan of proposed Inert Waste facility realigned to reduce cost of harbour infrastructure
- New breakwaters are constructed to provide shelter for the new berths
- Rock dredging required to provide sufficient water depth
- Reclamation, new quays, quay furniture, rock revetments, buildings, road accesses are provided
- New manifolds and pipelines to storage for hydrocarbons

- Protected side of breakwater used for berthing
- Inter-island freight remains at current location
- Inter-island passengers, cruise and other leisure sectors remain at St Peter Port

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £164m or up to £272m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
Provides a new port facility for commercial activities designed to meet current and future needs	Requires extensive capital works, reclamation and significant rock dredging
Moves commercial activities further from historic town centre and port	Timing of Longue Hougue South inert waste fill is likely too slow to provide required reclamation area without significant rework of its planning Note: Options to use inert reclamation fill from the existing Longue Hougue site have been proposed and could be considered as part of additional studies if the Harbour Development Programme / States considers the location requires further development. This may allow for earlier relocation from St Peter Port Harbour when compared against the timeline for filling of the proposed inert waste site with new material
Meets all commercial demand scenarios and spatial and facilities requirements	Land use on Longue Hougue South subject to future planning review
Improves and simplifies ISPS boundaries and interfaces to provide one contiguous area	Environmentally sensitive area
May reduce freight traffic congestion along the seafront of Belle Grève Bay as new facility would be close to freight sheds/yards	Adverse impact on the built environment in terms of visual impact
Preferable location for hydrocarbon pipelines to existing storage, alternatives may be more expensive and/or technically challenging	Bulk liquids storage location is not addressed within this option, but there is potential to move the storage (at additional cost) to meet the Hydrocarbons programme CSF
Harbour Offices inside the ISPS	New heat traced pipe under or around St Sampson's Harbour required for HFO
Frees up 30,000m^2 space within the St Peter Port Harbour and approximately 150m quay space (including removal of hydrocarbons) in St Sampson's Harbour for potential redevelopment/use	Cross currents in the area will make for a difficult approach to the port in some tidal conditions which may render the port available only at certain tidal states (tidal conditions are subject to additional research)
Provides possibilities for repurposing existing areas within the harbour to provided additional facilities for local or visiting yachts	
RoRo space allocated on proposed LHS landfill is compensated for with additional landfill on E quay	

Pros	Cons
Potentially a reduced impact of construction through the main town centre compared to other solutions	

Table 4.5: Pros and Cons for Option 3.1

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		Meets requirements for selected commercial sectors
Meets base demand/facilities requirements by 2050 and could meet high/low demand		Meets requirements for selected commercial sectors
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		Improves reliability and safety
Limited environmental footprint		Requires significant dredging and breakwater construction
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Cannot easily be developed in stages
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		May work with proposed inert waste scheme at same location, subject to timing, will free up most space in St Peter Port and St Sampson Harbours
Positive impact on built environment		Will have high visual impact

Table 4.6: Option 3.1 compliance with assessment criteria

4.2.2 Option 3.2: LoLo and bulk to new port adjoining Longue Hougue South

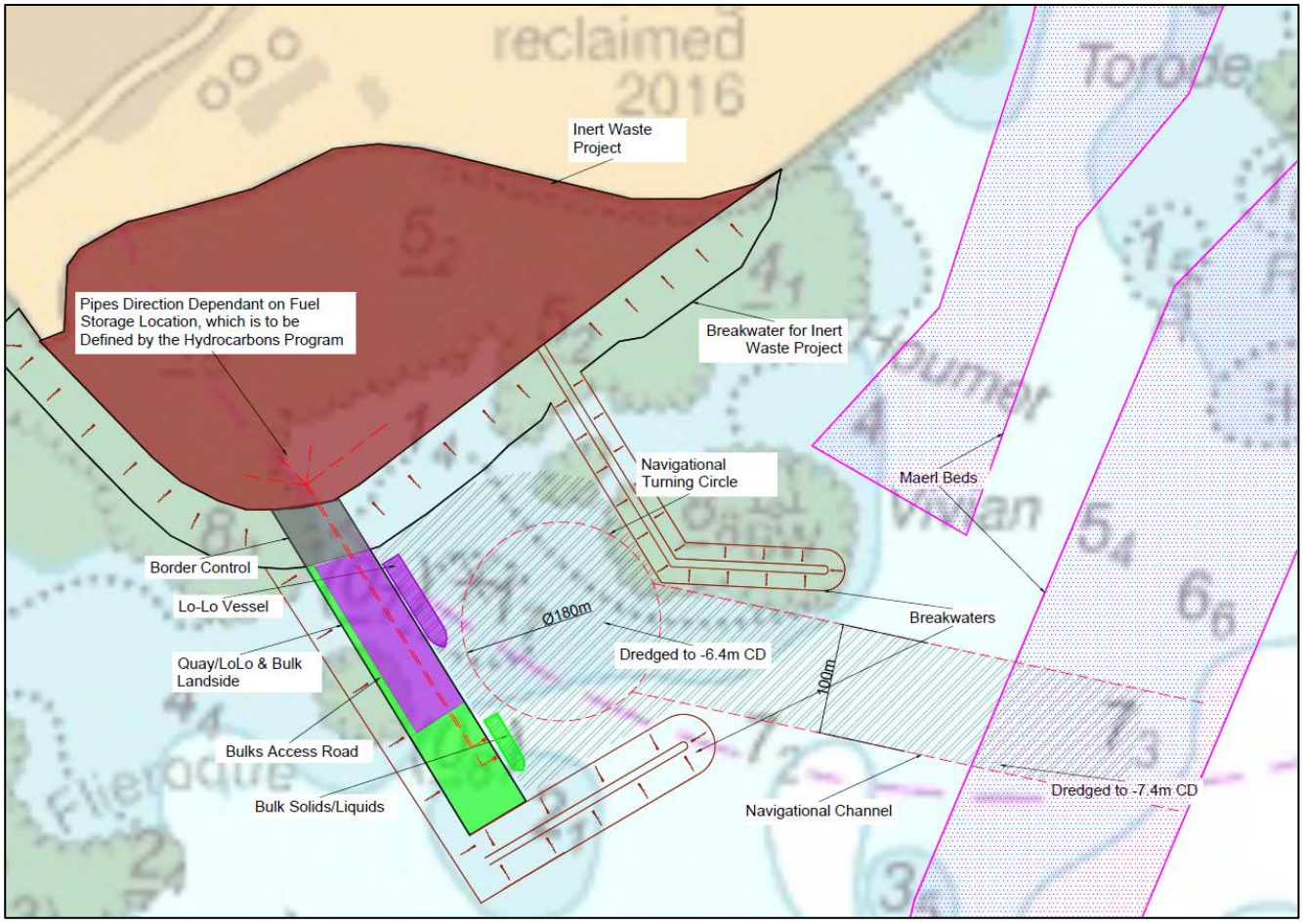


Figure 4.4: Option 3.2 layout

Key features

- New LoLo, bulk solids and bulk liquids (except HFO) facilities are provided adjacent Longue Hougue South to accommodate future spatial requirements including the high demand scenario
- Hydrocarbons delivered by unitised cargo or in bulk
- New manifolds and pipelines to storage for hydrocarbons
- New breakwaters are constructed to provide shelter for the new berths
- Rock dredging required to provide sufficient water depth
- New quays, quay furniture, rock revetments, buildings, road accesses are provided
- Protected side of breakwater used for berthing
- RoRo, international passengers, inter-island passengers, cruise and other leisure sectors remain at St Peter Port Harbour

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £121m or up to £201m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
Provides a new port facility for commercial activities excluding RoRo designed to meet current and future needs	Requires extensive capital works, reclamation and significant rock dredging
Moves some commercial activities further from historic town centre and port	Timing of Longue Hougue South inert waste fill likely too slow to provide required reclamation area without significant rework of its planning Note: Options to use inert reclamation fill from the existing Longue Hougue site have been proposed and could be considered as part of additional studies if the Harbour Development Programme / States considers the location requires further development. This may allow for earlier relocation from St Peter Port Harbour when compared against the timeline for filling of the proposed Inert Waste site with new material
Meets all commercial demand scenarios and spatial and facilities requirements	Environmentally sensitive area
Improves and simplifies ISPS boundaries and interfaces to provide one contiguous area at each port (St Peter Port and new port off Longue Hougue South)	Adverse impact on the built environment in terms of visual impact
Preferable location for hydrocarbon pipelines to existing storage, alternatives may be more expensive and/or technically challenging	Requires two ISPS areas
May reduce freight traffic congestion along the seafront of Belle Grève Bay as new facility would be close to freight sheds/yards	Bulk liquids storage location is not addressed but there is potential to move the storage (at additional cost) to meet the Hydrocarbons programme CSF
Frees up 6,000m^2 space within St Peter Port Harbour and approximately 150m of quay in St Sampson's Harbour for potential redevelopment/reuse	Cross currents in the area will make for a difficult approach to the port in some tidal conditions which may render the port unavailable at certain tidal states (tidal conditions are subject to additional research)
Bulk liquids could be delivered with the addition of suitable manifolds on quay and pipelines to existing or new storage	HFO import continue through St Sampson's Harbour as it cannot be supplied as unitised cargo (otherwise heat traced pipe under or around St Sampson's Harbour could be provided at additional cost)
Provides possibilities for repurposing existing areas within existing harbours to provided additional facilities for local or visiting yachts	
Only needs road access across proposed LHS inert waste site	

Table 4.7: Pros and Cons for Option 3.2

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		Meets requirements for selected commercial sectors
Meets base demand/facilities requirements by 2050 and could meet high/low demand		Meets requirements for selected commercial sectors except part of bulk liquids
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		Improves reliability and safety
Limited environmental footprint		requirement for significant dredging and breakwater construction
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Cannot easily be developed in stages
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		May work with proposed inert waste scheme at same location, subject to timing, will free up some space in St Peter Port and St Sampson Harbours
Positive impact on built environment		Will have high visual impact on views

Table 4.8: Option 3.2 compliance with assessment criteria

5. Improve provision for leisure sectors

This section describes options for leisure sectors to meet future demand. These could be combined in several ways with some/all options described for commercial activities.

5.1 Scenario 4: Provide new cruise facilities

One option is developed for a cruise berth under this scenario. It could be developed in conjunction with Scenario 1 options or in a modified form in conjunction with Scenario 2 options. A second option is developed to extend the cruise tender berths to meet forecast demand. Again, this could be developed with Scenario 1 or Scenario 2 options.

5.1.1 Option 4.1: Cruise berth E of QE II marina

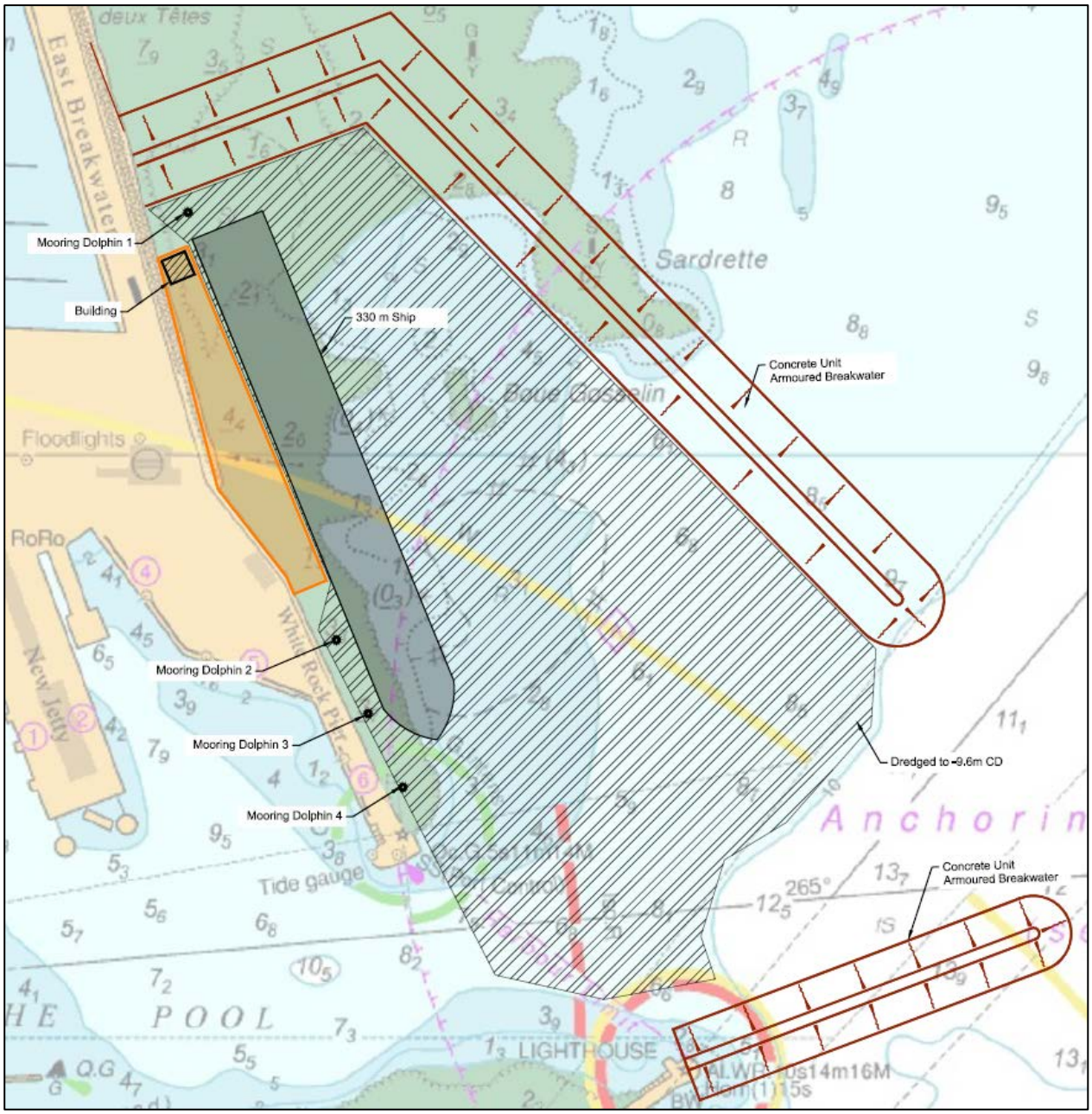


Figure 5.1: Option 4.1 layout

Key features

- Cruise berth for 330 m ship (largest identified in the demand study)
- Dredging required adjacent to existing structures to provide adequate water depth
- Breakwaters to be constructed to provide shelter
- Breakwaters alignment to take advantage of shallower areas and reduce material
- Land reclamation to provide base for new landside facilities
- Provision of quays, quay furniture, buildings and road accesses
- Provision of mooring and breasting dolphins
- Provision of accesses, parking and drop off areas

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £144m or up to £239m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
Provides a new cruise facility designed to meet current and future needs	Requires extensive capital works including rock dredging and new breakwaters
Meets all cruise demand scenarios and spatial and facilities requirements	Hides some of the existing granite faced harbour walls with a new quay
Does not impact adversely on existing operations	The condition of the granite structures supporting the White Rock Walkway are known to be poor. Driving of monopiles and associated dredging to provide marine facilities is a high risk
Frees up the cruise tender berths for other activities	Potential impact on the designated SSS and ABI
Additional berth that could be used for other marine activities when not being used by cruise vessels (seasonal). Note berth will not have LoLo or RoRo infrastructure	Infrastructure use would be seasonal
	Limited/unknown environmental data, therefore unknown environmental impact
	Limited to a single alongside berth. Multiple vessels can be accommodated at existing offshore anchor points

Table 5.1: Pros and Cons for Option 4.1

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		For cruise only
Meets base demand/facilities requirements by 2050 and could meet high/low demand		For cruise only
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		For cruise only
Limited environmental footprint		requirement for significant dredging and breakwater construction
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Cannot easily be developed in stages
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Will support tourism strategy only
Positive impact on built environment		Will have high visual impact on views

Table 5.2: Option 4.1 compliance with assessment criteria

5.1.2 Option 4.2: Additional cruise tender berth

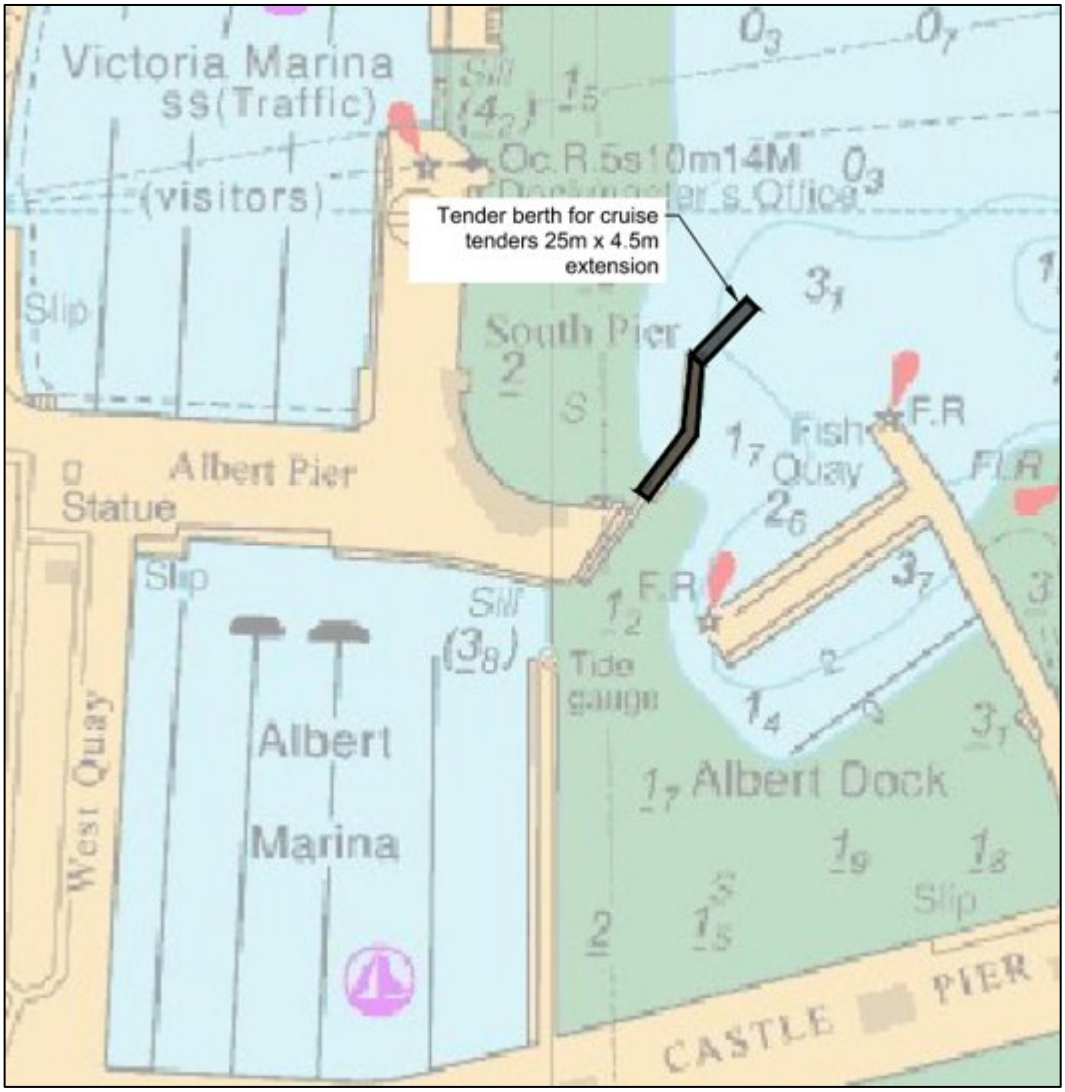


Figure 5.2: Option 4.2 layout

Key features

- Provision of an additional 25 m tender berth in Albert Pier for future growth
- Increase pontoon width to 4.5 m to improve circulation space and allow double sided use
- 50 m long access bridge increased in width to 3 m to improve access

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £1.4m or up to £2.3m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and Cons

Pros	Cons
Provides a new cruise tender berths designed to meet current and future needs	May make access to Albert dock and Albert Marina more congested
Meets all cruise tender berth demand scenarios and spatial and facilities requirements	Increase in pedestrians along Albert Pier. May require additional traffic management when cruise vessels are alongside
Does not impact adversely on existing operations	

Table 5.3: Pros and Cons for Option 4.2

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		For cruise tenders only
Meets base demand/facilities requirements by 2050 and could meet high/low demand		For cruise tenders only
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		For cruise tenders only
Limited environmental footprint		Small scale development
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Small scale development
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Supports tourism strategy
Positive impact on built environment		Neutral

Table 5.4: Option 4.2 compliance with assessment criteria

5.2 Scenario 5: Address future requirements for leisure facilities

This section describes options to meet future demand for leisure activities. These could be combined in several ways with the options described for commercial activities. They are all based on reconfiguring or enhancing facilities within St Peter Port or St Sampson's.

5.2.1 Option 5.1: New St Peter Port Harbour breakwater and marina with extended St Sampson's marina

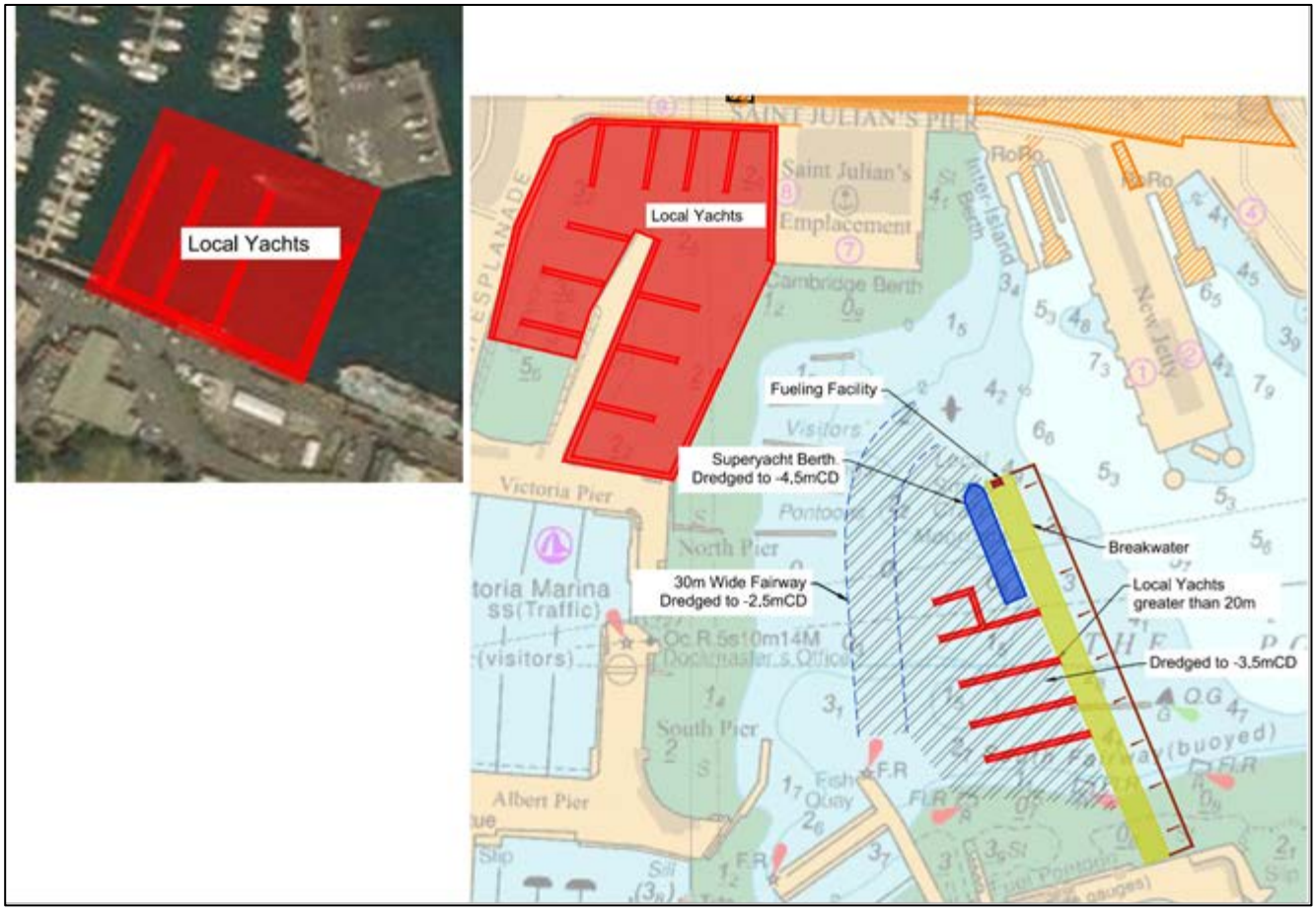


Figure 5.3: Option 5.1 layout in St Peter Port Harbour

Key features

This option could be adopted in conjunction with Scenario 1, or Scenario 2, with or without Scenario 4. Option 5.1 requires facilities development in both St Peter Port Harbour and St Sampson's Harbour comprising:

- Additional marina space and moorings for local yachts to meet the high demand scenario
- Provision of pontoons, services and moorings, for a marina located at the Careening Hard and an extended marina in St Sampson's Harbour
- No change to facilities or allocation for visiting yachts
- Fishing fleet and charter boats facilities remain unchanged
- Provision of berth and fuelling facility for super yachts
- Breakwater construction to shelter Victoria Marina and provide super yacht berth

- Dredging for access around the new breakwater

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £60m or up to £100m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
Retains facilities for fishing fleet and charter vessels	Extended marina at St Sampson's Harbour restricts manoeuvring area for bulk liquid and bulk solids vessels using St Sampson's Harbour
Additional local yacht demand exceeds high demand forecast with diversified locations to appeal to different local demands	Current uses of the Careening Hard no longer provided for
Breakwater inside St Peter Port Harbour provides space for additional larger (>20m) yacht berths in addition to other features	Breakwater inside St Peter Port Harbour may make access to Berth 2 more challenging for larger vessels and it removes a grounding option in the event of emergency /loss of navigational control
Provides additional shelter for Victoria Marina	

Table 5.5: Pros and Cons for Option 5.1

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		For local and super yachts only
Meets base demand/facilities requirements by 2050 and could meet high/low demand		For local and super yachts only
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		For local and super yachts only
Limited environmental footprint		Requires some breakwater construction and dredging but within existing harbours
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Yes
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Neutral
Positive impact on built environment		Minimal visual impact

Table 5.6: Option 5.1 compliance with assessment criteria

5.2.2 Option 5.2: New breakwater, fishing quay and marinas in St Peter Port Harbour

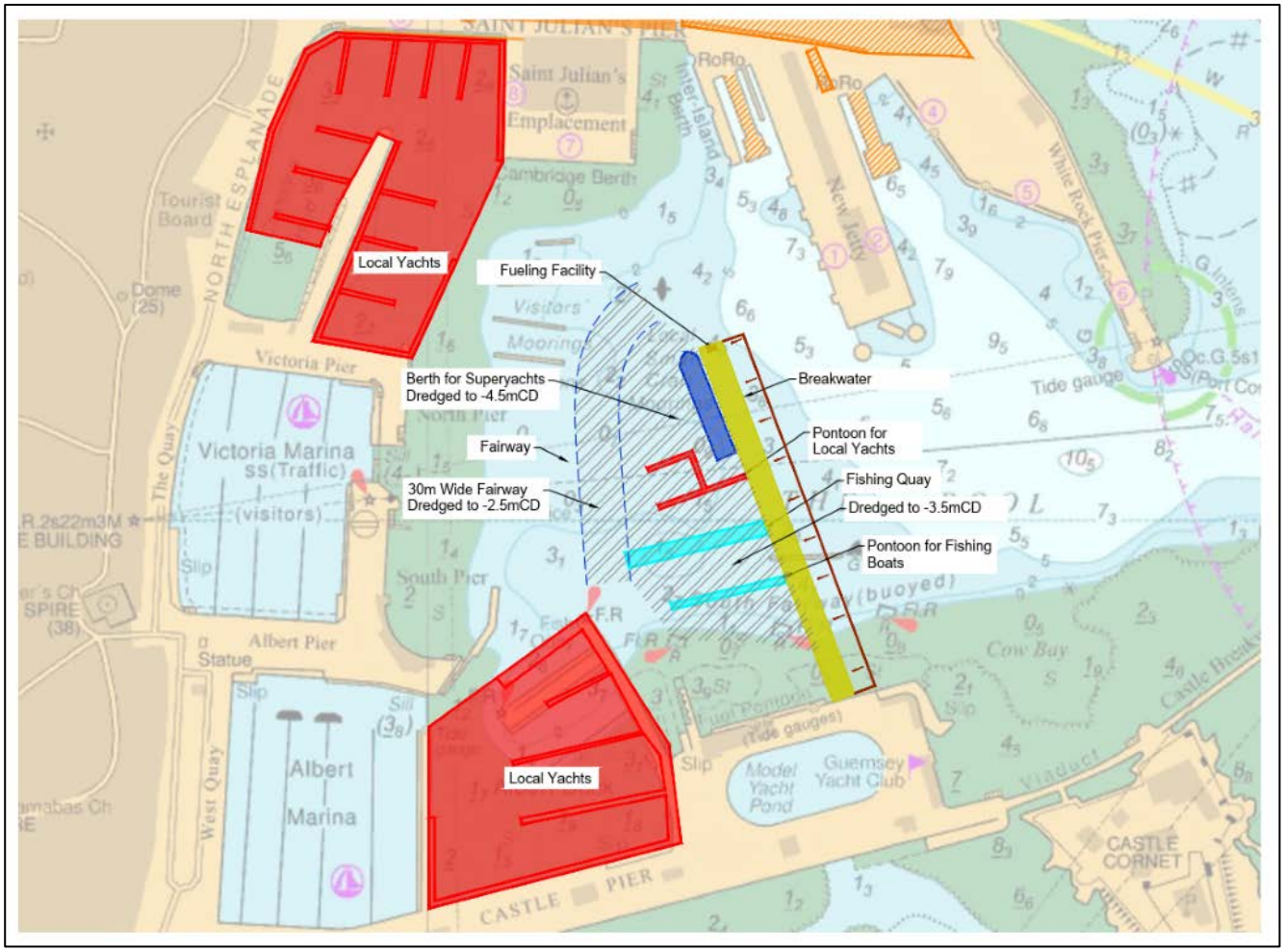


Figure 5.4: Option 5.2

Key features

This option requires facilities development only in St Peter Port Harbour. Key features are:

- Can be adopted in conjunction with Scenario 1 or Scenario 2 with or without Scenario 4
- Additional marina space and moorings for local yachts to meet the high demand scenario
- Provision of pontoons, services and moorings, for a marina located at the Careening Hard and in Albert Dock
- No change to facilities or allocation for visiting yachts
- Fishing fleet and charter boats moved to a new location within the harbour
- Provision of berth and fuelling facility for super yachts
- Breakwater construction to provide new sheltered area for fishing fleet and charter boats, provide additional protection to Victoria Marina and provide super yacht berth
- Dredging for access around the new breakwater and for the fishing fleet berths

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £70m or up to £115m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
New facilities for fishing fleet and charter vessels with additional berths beyond forecast high demand	Access to new breakwaters may impact on Guernsey yacht club slipway
Additional local yacht demand exceeds future high demand forecast with facilities in prime town centre location	Current uses of the Careening Hard no longer provided for
Breakwater inside St Peter Port Harbour provides space for additional larger (>20m) yacht berths in addition to other features	Breakwater inside St Peter Port Harbour may make access to Berth 2 more challenging for larger vessels and it removes a grounding option in the event of emergency /loss of navigational control
Provides additional shelter for Victoria Marina	More extensive construction activities than Option 5.1

Table 5.7: Pros and Cons for Option 5.2

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		For fishing sector, local and super yachts only
Meets base demand/facilities requirements by 2050 and could meet high/low demand		For fishing sector local and super yachts only
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		For fishing sector local and super yachts only
Limited environmental footprint		Requires some breakwater construction and dredging but within existing harbours
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Yes
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Neutral
Positive impact on built environment		Minimal visual impact

Table 5.8: Option 5.2 compliance with assessment criteria

5.2.3 Option 5.3: New breakwaters and marinas in St Peter Port Harbour with repurposed commercial berths

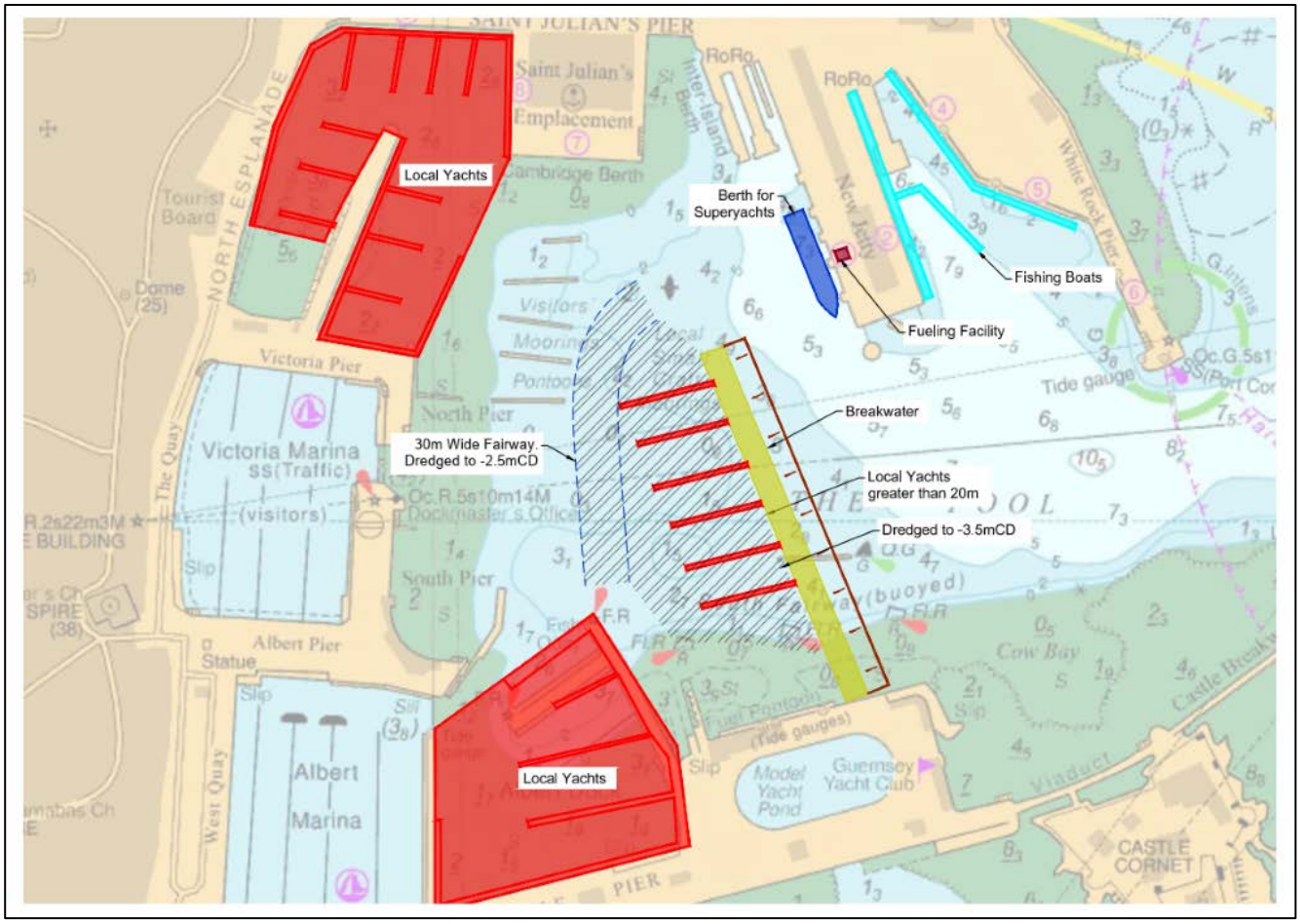


Figure 5.5: Option 5.3

Key features

- Can be adopted only in conjunction with Scenario 2, with or without Scenario 4
- Additional marina space and moorings for local yachts to meet the high demand scenario
- Provision of pontoons, services and moorings, for a marina located at the Careening Hard and in Albert Dock
- No change to facilities or allocation for visiting yachts
- Fishing fleet and charter boats moved to a new location within the harbour
- Provision of berth and fuelling facility for super yachts
- Breakwater construction to provides additional protection to Victoria Marina and provides new berths for yachts greater than 20m length
- Dredging for access around the new breakwater

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £65m or up to £105m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
New facilities for fishing fleet and charter vessels with additional berths beyond forecast high demand	Only works with Scenario 2 where commercial activities are moved to a new harbour east of QE II marina or Longue Hougue South
Additional local yacht demand met with facilities in excess of future high demand estimate, in prime town centre location	Current uses of the Careening Hard no longer provided for
Breakwater inside St Peter Port Harbour provides space for additional larger (>20m) yacht berths in addition to other features	
Provides additional shelter for Victoria Marina	

Table 5.9: Pros and Cons for Option 5.3

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		For fishing sector, local and super yachts only
Meets base demand/facilities requirements by 2050 and could meet high/low demand		For fishing sector local and super yachts only
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		For fishing sector local and super yachts only
Limited environmental footprint		Requires some breakwater construction and dredging but within existing harbours
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Yes
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Neutral
Positive impact on built environment		Minimal visual impact

Table 5.10: Option 5.3 compliance with assessment criteria

5.3 Scenario 6: Repurpose Havelet Bay

Havelet Bay is an attractive location to provide additional space for leisure facilities, given its proximity to St Peter Port Harbour and its semi enclosed nature. The option developed here allows some leisure sectors to be moved out of St Peter Port Harbour, potentially reducing congestion or freeing up space for other activities.

5.3.1 Option 6.1: Havelet Bay Marina

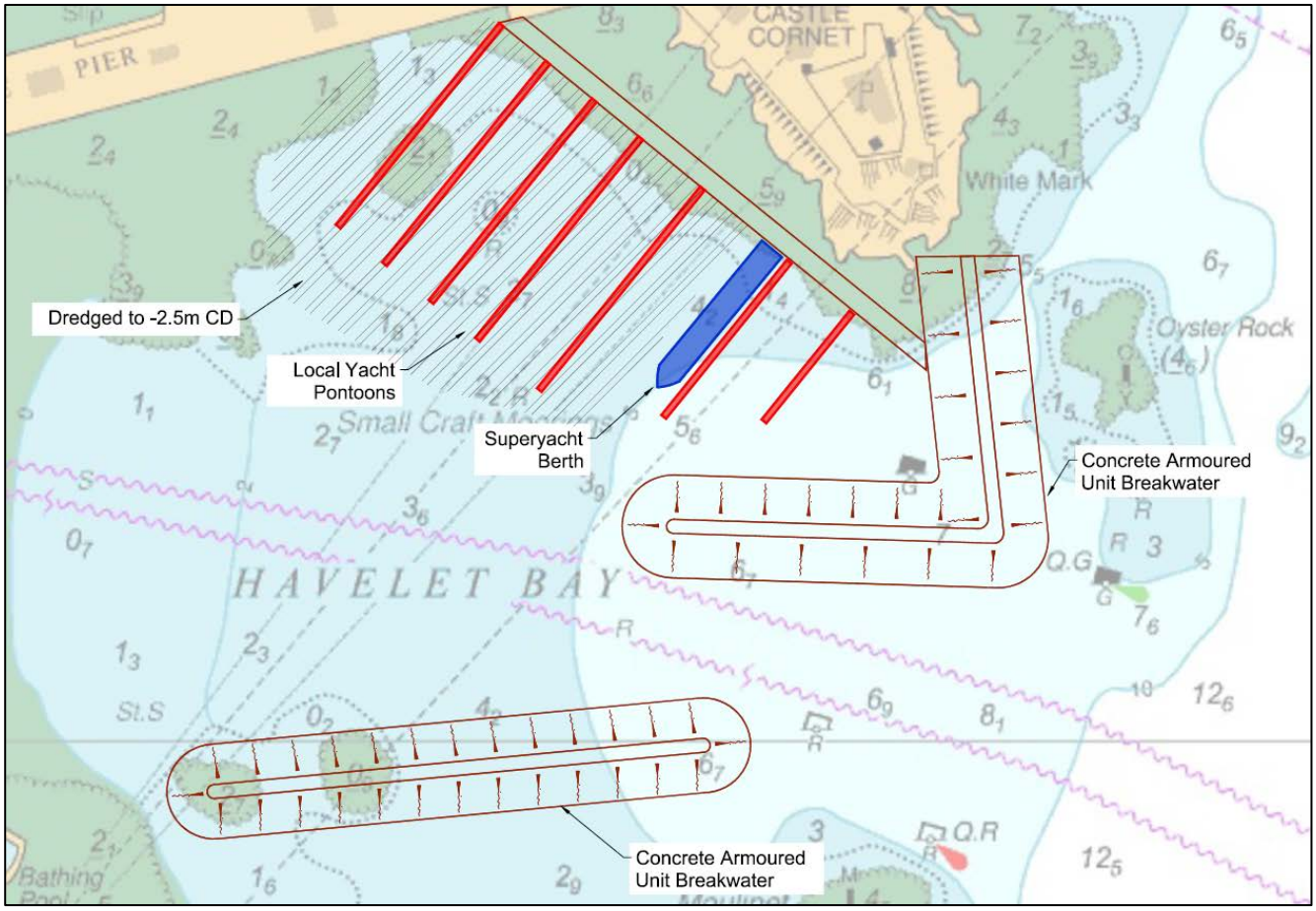


Figure 5.6: Option 6.1 Layout

Key features

- Additional marina space and moorings for local yachts and visiting yachts to exceed the high demand scenario
- Dedicated super yacht berth(s) could be developed
- Fishing fleet and charter boats potentially have more space or move to a new location within the harbour
- Breakwater construction to provide large sheltered area with variable water depth which could be developed in stages for a variety of leisure activities
- Dredging not necessarily required

Cost estimate

The estimated capital cost (excluding maintenance of existing and new facilities) is £55m or up to £95m including the Green Book recommended 66% optimism bias for this stage of concept definition.

Pros and cons

Pros	Cons
Large new flexible sheltered water space which could be developed in stages (after initial breakwater construction) for various uses	Requires extensive breakwater construction
Additional local yacht demand could be exceeded with facilities in excess of future high demand estimate for local and visiting yachts, in prime location close to town centre	High risk of environmental/planning problems due to landfall of main electricity connector within the bay, environmental designations on the south coast of the bay. and the need to join the northern breakwater to Castle Cornet
Breakwaters provide potential for super yacht berth(s) if additional quay/pontoon access can be provided in sufficient water depth	Depending on final location, wave reflections from southern breakwater may have an adverse impact on La Vallette bathing pools
Fishing sector might be accommodated if location for a solid quay and vehicular access to deep enough berths could be provided without adverse impact on the historic sea walls, castle or designated SSS	
Frees up space in St Peter Port Harbour	

Table 5.11: Pros and Cons for Option 6.1

Compliance with assessment criteria

Demand, spatial and facilities	RAG	Notes
Meets base demand/facilities study requirements in 2030		For local and super yachts only
Meets base demand/facilities requirements by 2050 and could meet high/low demand		For local and super yachts only
Safety reliability, environment and flexibility		
Improves safety and reliability over existing facilities		For local and super yachts only
Limited environmental footprint		Requires extensive breakwater construction and some dredging
Can be delivered in stages within the life of the demand study with flexibility to assist financial management		Needs major breakwater construction in one phase
Synergy with SoG Programmes & Planning		
Synergy with other SoG infrastructure programmes / provides additional (non-Harbours) benefits to the Island		Neutral
Positive impact on built environment		Will have high visual impact on views and Castle Cornet

Table 5.12: Option 6.1 compliance with assessment criteria

6. Conclusions

All scenarios and their options are summarised in the table below.

Scenario / option	Meets relevant spatial and facilities requirements	Meets assessment criteria	Estimated capital cost range* (GBP) million
Scenario 0: Do Nothing			
Option 0.1: Do Nothing at St Peter Port Harbour	Partly	Partly	0
Option 0.2: Do Nothing at St Sampson's Harbour	Partly	Partly	0
Scenario 1: Do Minimum at St Peter Port Harbour for commercial activities			
Option 1.1: Minimum changes at St Peter Port Harbour to meet requirements	Mostly	Yes	21 to 35
Option 1.2: Optimised St Peter Port Harbour layout to meet requirements and improve efficiency and security	Yes	Yes	27 to 45
Option 1.3: Alternative St Peter Port Harbour layout to meet requirements and improve efficiency and security	Yes	Yes	32 to 53
Scenario 2: Move St Peter Port Harbour commercial activities to new facility East of QE II marina			
Option 2.1: E of QE II Marina no dredging	Yes	Partly	255 to 423
Option 2.2: E of QE II Marina most compact layout	Yes	Partly	217 to 360
Scenario 3: New Port for commercial sectors adjoining Longue Hougue South			
Option 3.1: Most commercial sectors to new port adjoining Longue Hougue South	Yes	Partly	164 to 272
Option 3.2: LoLo and bulk to new port adjoining Longue Hougue South	Yes, for selected sectors	Partly	121 to 201
Scenario 4: Provide new cruise facilities			
Option 4.1: Cruise berth E of QE II marina	Yes	Partly	144 to 239
Option 4.2: Additional cruise tender berth	Yes	Yes	1.4 to 2.3
Scenario 5: Address future requirements for leisure facilities			
Option 5.1: New St Peter Port Harbour breakwater and marina with extended St Sampson's marina	Yes	Yes	60 to 100
Option 5.2: New breakwater, fishing quay and marinas in St Peter Port Harbour	Yes	Yes	70 to 115
Option 5.3: New breakwaters and marinas in St Peter Port Harbour with repurposed commercial berths	Yes	Yes	65 to 105
Scenario 6: Repurpose Havelet Bay			
Option 6.1: Havelet Bay Marina	Yes	Partly	55 to 95

Table 6.1: Summary of scenario compliance and cost

* Capital costs presented include Green Book recommended 66% optimism bias for high values and excludes any bias for low values.

This table summarises the option's overall compliance with spatial and facilities requirements and the project's assessment criteria. Where the option is designed to cover only some sectors, compliance with the spatial and facilities requirements and assessment criteria is presented only in relation to these sectors. The table also provides the capital cost estimate associated with each option.

While no one option provides a solution for all commercial and leisure sectors, options could be combined to address this. For example, all spatial and facilities requirements and the assessment criteria would be met if the following options were combined:

- Option 1.2: Optimised St Peter Port Harbour layout
- Option 5.1: New St Peter Port Harbour breakwater and marina with extended St Sampson's marina
- Option 4.2: Additional cruise tender berth

These options would not provide a dedicated cruise ship berth, but that could be provided by replacing *Option 4.2* with *Option 4.1: Cruise berth E of QE II marina.*

This example combination would fully satisfy all current and future spatial and facilities requirements up to the year 2050, including the high demand scenario and would meet all assessment criteria.

Other combinations could be selected to achieve similar benefits, though at differing costs.

No assessment of the value/benefit to Guernsey of the space that could be freed up within St Peter Port Harbour or St Sampson's Harbour where scenarios involving relocation of commercial activities from the existing ports are considered. This assessment is beyond the scope of this Future Harbour Requirements project and should be considered as part of other projects either within the Harbour Development Programme or Seafront Enhancement Area (SEA) programme.

Appendix A. Additional Information

Option 0.1 - Do Nothing at St Peter Port Harbour – Compliance with spatial and facilities requirements

	Commercial sectors Spatial requirements identified for peak 2020-2050 high demand	Option 0.1 compliance	Notes on existing facilities
LoLo			
Berth	1 no. 120 m long berth with a depth of 6.4 m	×	2 berths 93m and 82m - 1.4mCD and -1.6mCD
Landside space	8700 m^2 for 87 Twenty-Foot Ground Slots (TGS)	×	81 TGS
Facilities	Two dockside mobile harbour cranes Utilities: Potable water, fire water and area lighting Safety equipment: Bollards and fenders Safety equipment: Ladders, safety ropes and chains and lifesaving equipment	✓	
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint. Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the container storage area and to the local road network	✓	
Location requirements	The LoLo berth and yard should be located within the ISPS area of the port	✓	
RoRo			
Berth	2 No. 155 m long berths with a depth of 6.6 m	×	1x155 m @ -4.8 mCD and 1x115 m @ -4.2 mCD
Landside space	4,900 m^2 for 110 trailer spaces 9,070 m^2 for private and small commercial vehicles	× ×	6,200m^2 for 90 trailer spaces 4,200m^2

	Commercial sectors Spatial requirements identified for peak 2020-2050 high demand	Option 0.1 compliance	Notes on existing facilities
	53 m^2 for car imports and exports	✓	
Facilities	RoRo storage yard and private and small commercial vehicles: Utilities: Potable water, fire water and area lighting Safety equipment: Bollards and fenders Safety equipment: Ladders, safety ropes and chains and lifesaving equipment No specific facilities required for car imports and exports	✓	
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the trailer storage area and to the local road network Landside access is required to the marshalling yard and from the Border Control / Customs building for cars and small commercial vehicles The landside access route should be outside the ISPS Zone. The Border Control / Customs Building should be located on the edge of the ISPS Zone such that the ISPS Zone effectively runs through the point when vehicles have been cleared The area for storing imported and exported cars needs to be located in close proximity to the RoRo ramps and within the ISPS Zone	✓ × ✓ ✓ × ✓	Turning area inside port protected waters <2x LOA of largest RoRo. (PIANC Concept Design recommendation, can be less with Nav Sims) Landside access is complex and crosses the ISPS Zone in several places
Location requirements	The RoRo storage yard should be located within the ISPS area of the port and in close proximity to the RoRo berths The car and small commercial vehicle facility need to be at the same location as the foot	✓	

	Commercial sectors Spatial requirements identified for peak 2020-2050 high demand	Option 0.1 compliance	Notes on existing facilities
	passenger facility as the vehicles and foot passengers arrive on the same vessels Landside access is required to and from the car storage area		
International passengers and vehicular traffic			
Berth	2 No. 155 m long berths with a depth of 6.6 m (RoRo freight) 1 No. 50 m long berth with a depth of 3.3 m	×	1x155 m @ -4.8 mCD and 1x115 m @ -4.2 mCD and 1x50m @ -3.3mCD
Landside space	2,600m^2 for the passenger terminal 2,000m^2 for parking spaces and drop-off areas	×	1,700m^2 passenger terminal +1,000m^2 parking and drop off
Facilities	Passenger areas should include welfare facilities, retail areas and a café/restaurant area(s)	✓	
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint. Navigation channels and turning circles shall comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the passenger terminal for buses, taxis, private cars and foot passengers. The landside access route should not enter the ISPS port security area The departure area of the terminal needs to be within the ISPS zone and the public area needs to be outside the ISPS Zone. Therefore, the terminal needs to be as close to the boundary of the ISPS Zone as possible	× × ✓	See above for RoRo Access crossed ISPS
Location requirements	The terminal for day passengers should be located within walking distance of St Peter Port commercial area. For other passengers being located close to St Peter Port commercial area is not critical	✓	

	Commercial sectors Spatial requirements identified for peak 2020-2050 high demand	Option 0.1 compliance	Notes on existing facilities
Inter-island passengers			
Berth	1 No. 80 m long berth with a depth of 3.4 m	✓	
Landside space	340 m^2	✓	
Facilities	Utilities: Potable water, fire water and area lighting Safety equipment: Bollards and fenders Safety equipment: Ladders, safety ropes and chains and lifesaving	✓	
Access and ISPS	All tide access for inter-island charter vessels with maximum draught of 2.1 m Landside access to the berth for foot passengers with adequate day parking nearby, the landside access route should not enter the ISPS Zone	✓	
Location requirements	located in St Peter Port Harbour in close proximity to the town centre	✓	
Inter-island freight			
Berth	1 No. 40 m long berth with a depth of 4 m	×	1 no. 85 m length, -1.2 mCD
Landside space	400 m^2 for storage	✓	
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓	
Access and ISPS	All tide access where possible or as a minimum, sufficient depth at MLWS is required for inter-	✓	

	Commercial sectors **Spatial requirements identified for peak 2020-2050 high demand**	**Option 0.1 compliance**	**Notes on existing facilities**
	island freight vessels which currently have a maximum draught of 3.05m Landside access must be provided for vehicles, including mobile cranes and container lorries		
Location requirements	no specific location requirements	✓	

	Leisure sectors **Spatial requirements identified for peak 2020-2050 high demand**	**Option 0.1 compliance**	**Notes on existing facilities**
Local yachts			
Berth	2,110 berths 158,366m^2 marina area	×	Including St Sampson's Harbour 1,767 berths 125,880 m^2 marina area
Landside space	Pontoons should be connected to the shore by access ramps with suitable gradients	×	Partial – some access ramps steeper than guidelines
Facilities	Toilet and shower facilities Water supply Electric hook up on some berths	× ✓ ✓	Partial – additional toilet and shower facilities are recommended to meet current and future requirements
Access and ISPS	All tide access is a preference for local yachts	×	Partial – depends on location and vessel
Location requirements	Berths for local yachts should be located in sheltered water	✓	
Visiting yachts			
Berth	25,000m^2	✓	

	Leisure sectors Spatial requirements identified for peak 2020-2050 high demand	Option 0.1 compliance	Notes on existing facilities
Landside space	2 x 35 m^2 for shower and toilet blocks	✓	Victoria Marina
Facilities	Toilet and shower facilities Water supply Electric hook up on some berths Refuse disposal Wi-Fi	✓ ✓ ✓ ✓ ✓	Victoria Marina
Access and ISPS	All tide access for a proportion of the visiting yachts Pontoons connected to the shore by access ramps with suitable gradients	✓	
Location requirements	Located in sheltered water Close to the town centre, restaurants, shops and other amenities	✓	
Super yachts			
Berth	1 No. 90 m long berth with a depth of 4.5 m	×	None specifically provided
Landside space	90m^2 fuelling area	×	None specifically provided
Facilities	Fuelling facility Water supply facility Electric hook up Waste disposal facilities	×	None specifically provided
Access and ISPS	All tide access is required for super yachts, noting that super yachts deeper than 4 m draught can use the commercial berths if required Landside access for crew, tankers and to restock vessel stores	×	None specifically provided

	Leisure sectors **Spatial requirements identified for peak 2020-2050 high demand**	**Option 0.1 compliance**	**Notes on existing facilities**
	Pontoons should be connected to the shore by access ramps with suitable gradients		
Location requirements	Close to the town centre, restaurants, shops and other amenities	×	None specifically provided
Fishing			
Berth	Berths 149 Marine area 17,064 m^2	×	Berths 135 Marine area 15,410 m^2
Landside space	150m^2 for 20 units indoor storage 200m^2 for 20 units outdoor storage	✓	
Facilities	Fresh water Electricity Lighting Toilet facilities Hoist for loading and unloading Outside and inside storage areas	✓	
Access and ISPS	Berth locations should be accessible by vehicles All tide access is required for commercial fishing vessels Pontoons should be connected to the shore by access ramps with suitable gradients	✓	
Location requirements	Berths in clean seawater	✓	
Cruise ship tenders			
Berth	1 no. 75m length	×	1 no. 50m length

	Leisure sectors Spatial requirements identified for peak 2020-2050 high demand	Option 0.1 compliance	Notes on existing facilities
Landside space	2,500m^2	✓	
Facilities	None	✓	
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint Landside access must be provided for cars, taxis and foot passengers Security control to berth	✓ ✓ ✓	
Location requirements	Within walking distance of the town centre If the cruise tender berth is remote from the town centre, then additional buses will be required together with a suitably located bus terminal in St Peter Port Harbour	✓	
Cruise ship berth			
Berth	1 no. 375 m length 9.6 m depth	×	Not provided
Landside space	5,500m^2	×	Not provided
Facilities	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint Navigation channels and turning circles shall comply with best practice for width and depth e.g. PIANC WG121 Report	×	Not provided
Access and ISPS	Security control to vessel	×	Not provided
Location requirements	Within walking distance of the town centre If the cruise berth is remote from the town centre, then additional buses will be required together with a suitably located bus terminal in St Peter Port Harbour	× ×	Not provided

Option 0.2 Do Nothing at St Sampson's Harbour

	Commercial sectors Spatial requirements identified for peak 2020-2050 high demand	Option 0.2 compliance	Notes on existing facilities
Bulk solids			
Berth	1 no. 110 m length 5.5 m depth	×	1 no. 140 m length +4.3 mCD depth 1 no. 170 m length +3.4mCD depth
Landside space	2,000m^2	✓	
Facilities	Crane for loading / offloading	✓	
Access and ISPS	Landside access is required to the local road network All tide or near all tide access for vessels Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report	✓ × ×	 Vessels restricted to high tide access only Approach and turning areas do not meet best practice
Location requirements	No specific requirements for berth, but vessel and lorry access must be available in order to transfer the cargoes Silos for cement storage must be located in close proximity to the cement berth to allow self-discharge of the vessel	✓ ✓	Berth access is tidally restricted
Bulk liquids (compliance assessed against the requirements identified in the Hydrocarbons Supply Programme			
Berth	To accommodate design vessel range adopted Upper range 147m LOA, 21.4m beam, 8.3m draught Berth pocket: length 206m, width 32m, depth 9.8m	×	1 no. 140 m length +4.3 mCD depth 1 no. 170 m length +3.4mCD depth
Landside space	Pipeline corridor leading to storage	✓	

	Commercial sectors **Spatial requirements identified for peak 2020-2050 high demand**	**Option 0.2 compliance**	**Notes on existing facilities**
	Approximately 18,000 m^3 storage Estimated 9,500m^2 facility area	× ×	Existing storage capacity and area scaled to smaller vessels
Facilities	Manifolds for upload to pipeline and storage	✓	
Access and ISPS	Marine access to berth at MSL and above	×	
Location requirements	Close to storage facilities Away from centres of population and occupied buildings	✓ ×	 Storage in St Sampson's Harbour

	Leisure sectors **Spatial requirements identified for peak 2020-2050 high demand**	**Option 0.1 compliance**	**Notes on existing facilities**
Local yachts			
Berth	2,110 berths and 158,366m^2 marina area		Including St Peter Port Harbour 1,767 berths 125,880 m^2 marina area
Landside space	Pontoons should be connected to the shore by access ramps with suitable gradients	✓	
Facilities	Toilet and shower facilities. Water supply Electric hook up on some berths	✓ ✓ ✓	
Access and ISPS	All tide access is a preference for local yachts	×	Tidal restrictions for all but the shallowest draft vessels
Location requirements	Berths for local yachts should be located in sheltered water	✓	

Appendix B. Technical Notes

Future Harbour Requirements Study 2020

Option 1.1 - Technical Note

B2382200-JAC-02-XX-TN-C-0002 | P03

08 October 2020

States of Guernsey

-

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	20/08/20	Draft	IL	CH	MSS	MSS
P02	28/08/20	Final	IL	CH	MSS	MSS
P03	08/10/20	Final	IL	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 1.1 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0002
Revision:	P03
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark Sherlock-Smith
Author:	Inma Lastres
File Name:	Option 1.1 - technical note P03

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Contents

1. Introduction

The shortlist identifies that all commercial sectors (with the exception of bulk liquids) can be provided by a Do Minimum option. This demonstrates that for most sectors there is no harbour specific requirement to relocate services outside of the current harbours or to expand current berth areas. However, future spatial requirements do require a modification to the landside area to meet base or high demand.

Our spatial requirements and demand study of the operations in St Peter Port revealed the need to increase the land area for the commercial sectors and the reorganisation/provision of the landside facilities considering the public and the security areas to optimize traffic routes and security controls within the port.

The option we consider in this technical note consists of the reconfiguration of the existing St Peter Port Harbour to provide facilities to better suit current commercial needs and meet forecast commercial (high scenario) requirements. Note that leisure sectors are considered separately in another note. This is the Do Minimum Option 1.1 for St Peter Port Harbour commercial sectors.

The key considerations used in the development of the option are :

1. Minimise construction of marine infrastructure and use existing landside areas as far as reasonably practical, minimising loss of public access areas.
2. Improve traffic flows within conflict areas, and segregate inbound and outbound traffic.
3. Increase freight marshalling areas.
4. Increase all traffic queuing room (inbound and outbound) to accommodate forecast requirements.
5. Maintain foot passenger access to the Cambridge Berth, Inter-island berth and New Jetty passenger terminal.
6. Maintain the LoLo berth and yard, RoRo berth and yard, departure area of the international passengers and car import and export area within the ISPS Zone.

2. Harbour layout

Option 1.1 considers the reconfiguration of the existing landside space, keeping the existing marine facilities as per the current arrangement for the commercial activities .

The proposed layout is as shown in Figure 1.

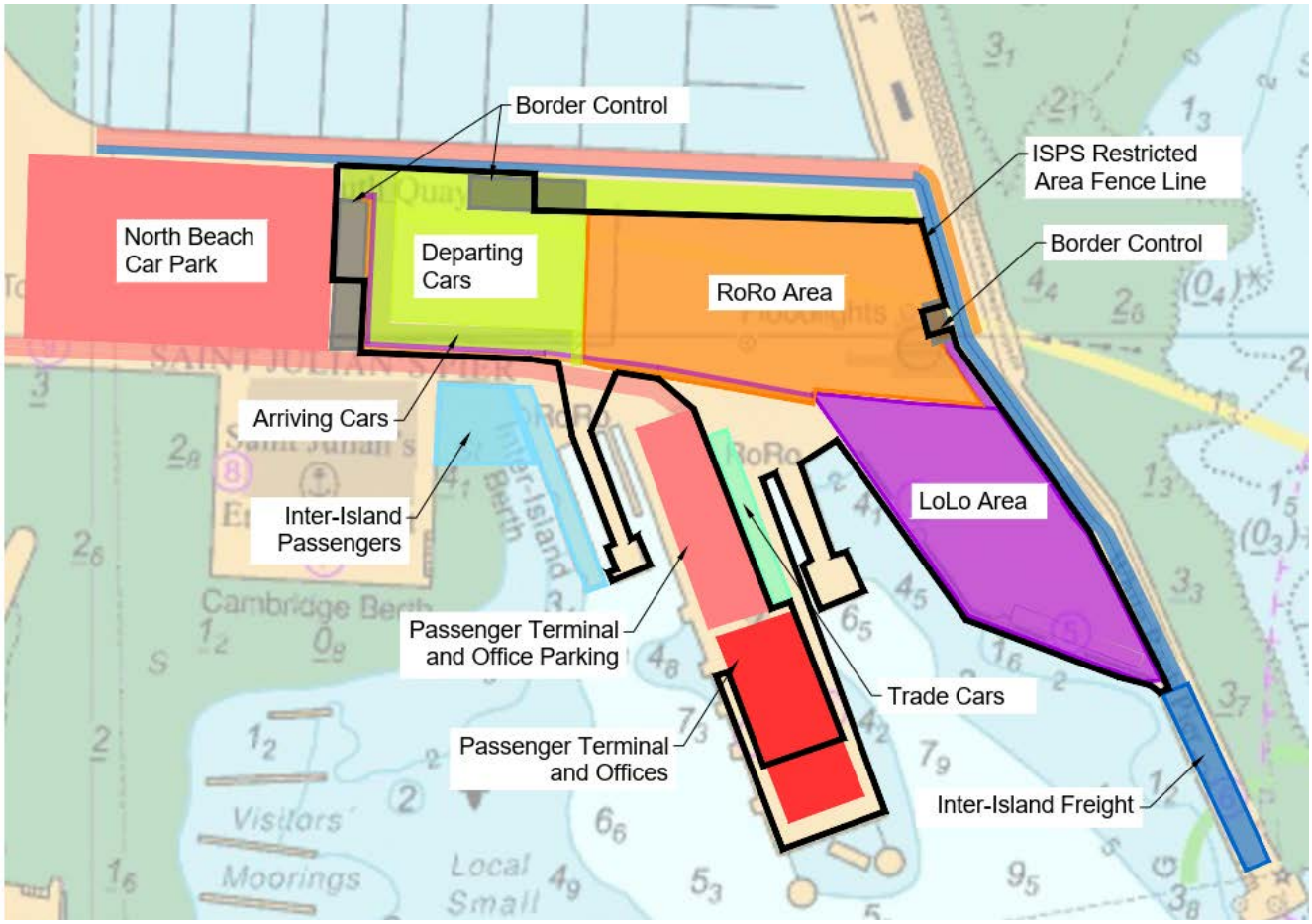

Figure 1: Layout for reconfiguration of the existing landside areas – Option 1.1

The terminal has been reconfigured to improve traffic paths by reducing conflict areas and segregating traffic flows. Figure 1 shows the proposed traffic routes for the different sectors.

Private vehicles enter the Harbour along the north side of the South Quay access road, check-in and then queue west to east in the marshalling area. Inbound cars pass through the Customs building (to the west) prior to exiting the harbour via St Julian's Pier. International freight traffic enters the Harbour along the South Quay access road and checks-in through the ISPS gate at the north eastern entrance. The international freight traffic remains within the ISPS until it exits the port via St Julian's Pier. Inter-island freight traffic enters and exits the port along the south quay and remains outside of the ISPS boundary throughout.

Private vehicles and foot passengers accessing the international passengers area enter and exit the port via St Julian's Pier.

Private vehicles and foot passengers access the inter-island passengers berth following the pedestrian designated paths along St Julian's Pier.

3. Option description

Option 1.1 considers the reconfiguration of the existing landside for the RoRo, LoLo and International passengers areas. The remaining areas of the Port are to remain as per the current arrangement.

3.1 Berths

Existing berths in general are not required to be modified for Option 1.1.

3.2 Landside space

The following subsections describe the landside modifications Option 1.1 considers for the different sectors.

3.2.1 LoLo

The existing LoLo and RoRo areas are designed to enable fluctuation of demand for space between LoLo and RoRo. The LoLo yard currently has 81 Twenty-foot Ground Slots (TGS). The high scenario forecasts a future requirement of 87 TGS. This is provided in two different areas within the designated LoLo landside. The main ground slots area for the containers provides space for 70 containers and a smaller area for 17 containers will be used for stripping and stuffing. As the forecast demand for RoRo is that it will reduce post 2030, the LoLo yard could take a greater part of the designated area. Option 1.1 would provide an easy transition for required space between RoRo and LoLo to cater for any potential demand changes.

3.2.2 RoRo

The spatial requirements showed that the number of trailer spaces required within the RoRo yard to accommodate the inbound and outbound unaccompanied trailers for the 2050 high scenario is 120 trailer spaces. However, the number of available trailer spaces is currently 90. Therefore, to accommodate the increase in the trailer spaces, it is necessary to extend the RoRo storage yard to the existing car marshalling area and North Beach Car Park, to the West. Trailers are recommended to be orientated at 45° to minimise the required draw forward distance and manoeuvring area between rows of trailers. The trailer rows aligned north to south, provide the most compact solution and are better for the loading and unloading operations.

The current area used for car marshalling has 4,200 m^2. To meet future requirements, an area of 5,975 m^2 is required. As the RoRo yard is to expand and use part of the existing car marshalling area, the new car marshalling area should be located to the west of the RoRo storage yard, in close proximity to a proposed new/relocated Customs and Immigration facility.

The area dedicated to car imports and exports is to remain unaltered.

3.2.3 International passengers

The international passenger terminal is to remain on the New Jetty. However, the existing terminal has an area of approximately 1,700 m^2, and the forecast requires a 2600 m^2 terminal to suit future needs. Option 1.1 considers demolishing the existing international passenger terminal and adjacent offices to build a larger terminal building in the same location. This should be able to accommodate international passengers on the ground floor, inside the ISPS area, and office staff from the Blue Economy building within the first floor, outside of the ISPS area.

3.2.4 Inter-island freight

The inter-island freight landside area is to remain unaltered.

3.2.5 Inter-island passengers

The inter-island passengers landside area is to be increased. An area of approximately 500 m^2 in between the inter-island and Cambridge berths is proposed to be reclaimed and filled, to create additional drop off areas for inter-island passengers.

3.3 Facilities

The existing Customs and Immigration office is located to the east of the RoRo yard. To improve traffic flow, it is recommended to demolish this building, replacing it with a larger Customs and Immigration office towards the West of the RoRo yard with two small offices at the north and north east of the site at the entrances designated for private cars and for international freight, respectively.

Within the International passengers area, landside facilities are required to provide sufficient parking spaces and drop off areas for international passengers. Option 1.1 considers the demolition of the offices within the New Jetty and use of the freed space for parking spaces and drop off areas.

The North Beach Car Park, outside of the Port area, is reduced and is outside Guernsey Harbours requirements. If the car park space is required to be re-established additional car parking could be provided by creating two levels to accommodate the same number of vehicles as existing. An estimation of the additional land required from the North Beach Car Park to meet the high scenario forecast has been made. A total of 5,000 m^2 are likely to be required.

3.4 Access and ISPS fence

The following subsections describe the access, traffic routes (see Figure 1) and ISPS limitations for each sector.

The South Quay has currently two lanes (one inbound and one outbound). An additional inbound lane is required to accommodate the traffic entering the Port and accessing the Eastern Arm, and no additional lanes are required to accommodate the traffic exiting the Port, North Beach Car Park and Eastern Arm.

St Julian's Pier currently has two outbound lanes, which are sufficient to accommodate the traffic exiting the Port. An inbound lane is also required to provide access to the New Jetty. To accommodate this, parking spaces to the south of the North Beach Car Park could potentially be used.

Three lanes should be available at the northern port entrance, one to provide access (inbound) to the LoLo and RoRo yard and two (inbound and outbound) to provide access to the inter-island freight area. There are currently two lanes (one inbound and one outbound) and therefore, an extra lane(inbound) should be created.

The RoRo, LoLo and departures zone of the passenger terminal are within the ISPS boundary. Inter-island freight and passengers, parking spaces/drop off areas and the arrivals area of the international passenger terminal are outside of the ISPS area.

3.4.1 LoLo freight

LoLo freight vehicles access the Port along the north side of the South Quay road access using the north eastern entrance. LoLo traffic exits the Port along the south aide of St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.2 RoRo freight

RoRo freight vehicles access the Port along the South Quay road access, using the north eastern entrance. RoRo traffic exits the Port along St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.3 Private cars

Private cars access the Port along the South Quay access road, using the north entrance (only for private cars). Cars exit the Port along St Julian's Pier access road prior to enter the Weighbridge Roundabout.

3.4.4 International passengers

The landside access/exit for international passengers is along St Julian's Pier access road. To avoid conflict with the ISPS boundary it is proposed that a ramp is provided to go over the access and egress point of RoRo Ramp 1. It is recognised that this is not ideal as this still requires crossing the ISPS boundary even though it will be at a different level.

3.4.5 Inter-island freight

Inter-island freight vehicles are to access the Port along the South Quay access road, using the north eastern entrance. These vehicles will exit the port following the same route as they are outside of the ISPS boundary.

3.4.6 Inter-island passengers

Inter-island passengers (pedestrians and potential personal/ drop off vehicles) are to access the Inter-island berth along St Julian's Pier access road. An existing drop off area is located in close proximity to the berth.

4. Location and spatial requirements

Table 1 provides a comparison of the spatial requirements identified and Option 1.1.

	Spatial requirements identified for peak 2020-2050 high demand	Option 1.1
LoLo		
Berth	1 no. 120 m long berth with a depth of 6.4 m	✓*
Landside space	8,700 m^2 should be provided for 87 Twenty-feet Ground Slots	✓
Facilities	Two mobile cranes should be provided Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint. Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the container storage area and to the local road network	✓
Location Requirements	The LoLo berth and yard should be located within the ISPS area of the port	✓
RoRo		
Berth	2 No. 155 m long berths with a depth of 6.6 m	✓*
Landside space	8,400 m^2 should be provided for 120 trailer spaces 5,975 m^2 should be provided for private and small commercial vehicles 576 m^2 should be provided for car imports and exports	✓
Facilities	RoRo storage yard and private and small commercial vehicles – Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided No specific facilities required for car imports and exports	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the trailer storage area and to the local road network Landside access is required to the marshalling yard and from the Border Control / Customs building for cars and small commercial vehicles. The landside access route should be outside the ISPS Zone. The Border Control / Customs Building should be located on the edge of the ISPS Zone such that the ISPS Zone effectively runs through the point when vehicles have been cleared	✓

	Spatial requirements identified for peak 2020-2050 high demand	Option 1.1
	The area for storing imported and exported cars needs to be located in close proximity to the RoRo ramps and within the ISPS Zone	
Location requirements	The RoRo storage yard should be located within the ISPS area of the port and in close proximity to the RoRo berths The car and small commercial vehicle facility need to be at the same location as the foot passenger facility as the vehicles and foot passengers arrive on the same vessels Landside access is required to and from the car storage area	✓
International passengers and vehicular traffic		
Berth	2 No. 155 m long berths with a depth of 6.6 m (RoRo freight) 1 No. 50 m long berth with a -3.3 mCD depth	✓*
Landside space	2600 m^2 should be provided for the passenger terminal 2000 m^2 should be provided for parking spaces and drop off areas	✓
Facilities	Passenger areas should include welfare facilities, retail areas and a café/restaurant area(s).	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint. Navigation channels and turning circles shall comply with best practice for width and depth e.g. PIANC WG121 Report. Landside access is required to the passenger terminal for buses, taxis, private cars and foot passengers. The landside access route should not enter the ISPS port security area The departure area of the terminal needs to be within the ISPS zone and the public area needs to be outside the ISPS Zone. Therefore, the terminal needs to be as close to the boundary of the ISPS Zone as possible	✓
Location requirements	The terminal for day passengers should be located within walking distance of St Peter Port Harbour commercial area. For other passengers being located close to St Peter Port Harbour commercial area is not critical	✓
Inter-island passengers		
Berth	1 No. 80 m long berth with -3.4 mCD depth	✓
Landside space	Based on the assumption of 2 people standing per square metre, which leaves enough room between passengers for luggage and personal space, the required area is approximately 340 m^2, assuming all vessels are leaving at similar times and are fully booked	✓
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	All tide access is required for inter-island charter vessels which have a maximum draught of 2.1 m Landside access is required to the berth for foot passengers with adequate day parking nearby, the landside access route should not enter the ISPS Zone	✓

	Spatial requirements identified for peak 2020-2050 high demand	Option 1.1
Location requirements	Inter-island passenger services need to be located in St Peter Port in close proximity to the town centre	✓
Inter-island freight		
Berth	1 No. 40 m long berth with a depth of 4 m	✓*
Landside space	400 m^2 should be provided for storage	✓
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	All tide access where possible or as a minimum, sufficient depth at MLWS is required for inter-island freight vessels which currently have a maximum draught of 3.05m Landside access must be provided for vehicles, including mobile cranes and container lorries	✓
Location requirements	There are no specific location requirements for inter-island freight	✓

Table 1: Comparison of Option 1.1, Do Minimum, with spatial requirements

5. Assumptions

- It has been assumed that demolition of existing buildings is possible subject to reinstatement of these within the Port area
- It is assumed that the new jetty is structural sufficient to withstand the additional loading of a two storey passenger terminal building
- It is assumed that the RoRo and LoLo area will remain shared and can be flexible in accordance with demand
- A standard car parking space has been assumed as 4.8 m x 2.4 m, equal to 11.52 m^2
- The total number of Twenty-foot ground slots (TGS) required has been estimated based on the number of Twenty-foot Equivalent Units per annum, the dwell time, peak factor (1.3 in accordance with the FHRS (Halcrow, 2010)), the operational days per annum (assuming 312 days which is equivalent to 6 days per week) and the stack height
- The total number of trailers has been estimated based on the number of trailers per annum, the peak factor (1.5 in accordance with the FHRS (Halcrow, 2010)), dwell time and the number of service days (assuming 365 days).The spatial requirements for the waiting area is based on the assumption of 2 people standing per square metre, which leaves enough room between passengers for luggage and personal space
- Sufficient space is provided for private cars to queue prior to access and after accessing the car marshalling area, assuming each vehicle takes up to 6.25 m

6. Costs

The implementation cost is between **£ 21** and £**35** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

The cost of the car park is not included in the total cost. If additional parking spaces cannot be provided elsewhere, a double deck or an underground car park would be required, with a cost of £14 and £25 million, respectively.

Guernsey Future Harbour Requirements 2020

Jacobs

Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				06/07/2020	B2382200
			Estimated By:		ILE
Sheet Title:			Jacobs		
Option 1.1 Cost Summary			Status of Design:		
			Concept/Planning		

Item	Quantity	Units	Unit Cost	Subtotals	Total Cost
Preliminaries					£ 2,848,500.0
General Conditions and Mod/Demob	20%	-	-	£ 2,848,500.00	
Pavement				.	£ 1,595,000.0
Concrete pavement	29,000	EA	£ 55.0	£ 1,595,000.00	
Buildings					£ 12,647,700.0
Customs/offices	1,500	Sq.m	£ 1,192.00	£ 1,788,000.00	
Blue Economy building	1,600	Sq.m	£ 2,516.00	£ 4,025,600.00	
Passengers terminal International	2,600	Sq.m	£ 2,516.00	£ 6,541,600.00	
Building dismantling	2,500	Sq.m	£ 117.00	£ 292,500.00	
Access Bridges					£ 2,113,336.0
Double deck linkspan including piled foundations for vehicle access	1,200	Sq.m	£ 1,275.00	£ 1,530,000.00	
Fixed bridge tunnel for pedestrian access	60	m	£ 8,055.60	£ 483,336.00	
Steps and lifts	1	EA	£ 100,000.00	£ 100,000.00	
Reclamation (Inter-island passengers)					£ 289,800.
Supply and fill material	4,000	Cu.m	£ 69.	£ 276,000.00	
Ground Improvement	1	EA	£ 13,800.0	£ 13,800.00	
Revetment (Inter-island passengers)					£ 230,800.
Rock Armor	1,000	Cu.m	£ 74.	£ 74,000.00	
Underlayer	400	Cu.m	£ 72.	£ 28,800.00	
Core Rock	2,000	Cu.m	£ 64.	£ 128,000.00	
				Infrastructure Subtotal	£ 19,725,136.0
Planning, Design, Permits, and Construction Support				7%	£ 1,381,000.00
Infrastructure Construction Total					£ 21,000,000.00
Optimism Bias				66%	£ 14,000,000.0
				Total Project Cost	£ **35,000,000.00**

*Percentages used for Design and Permits only consider infrastructure cost and excludes cost of equipment.

Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

Future Harbour Requirements Study 2020

Option 1.2 - Technical Note

B2382200-JAC-02-XX-TN-C-0003 | P02

08 October 2020

States of Guernsey

-

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	28/08/20	ISSUE	IL	CH	MSS	MSS
P02	08/10/20	Final	IL	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 1.2 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0003
Revision:	P02
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark Sherlock-Smith
Author:	Inma Lastres
File Name:	Option 1.2 - technical note P02

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Contents

1. Introduction

The shortlist identifies that all commercial sectors (with the exception of bulk liquids) can be provided by a Do Minimum option. This demonstrates that for most sectors there is no harbour specific requirement to relocate services outside of the current harbours or to expand current berth areas. However, future spatial requirements do require a modification to the landside area to meet base or high demand.

Our spatial requirements and demand study of the operations in St. Peter Port Harbour revealed the need of increasing the land and berth space for the commercial sectors and the reorganisation/provision of the landside facilities considering the public and the security areas to optimize traffic routes and security controls within the port.

The option we consider in this technical note consists of the reconfiguration of the existing St Peter Port Harbour to provide facilities to better suit current commercial needs and meet commercial forecast (high scenario) requirements. Note that leisure sectors are considered separately in another technical note.

This report considers the Do Minimum Option 1.2 for St Peter Port Harbour commercial sectors. The main difference with Option 1.1 are the location of the international passenger terminal, car parking spaces/drop off areas and the Blue Economy building in Cambridge berth, and the Harbour offices in the New Jetty. The key considerations used in the development of the option are listed below:

1. Minimise construction of marine infrastructure and use existing landside areas as far as reasonably practical, minimising loss of public access areas.
2. Improve traffic flows within conflict areas, and segregate inbound and outbound traffic.
3. Increase freight marshalling
4. Increase all traffic queuing room (inbound and outbound) to accommodate forecast requirements.
5. Maintain foot passenger access to the Cambridge Berth, Inter-island berth and New Jetty passenger terminal.
6. Maintain the LoLo berth and yard, RoRo berth and yard, departure area of the international passengers and car imports and exports area within the ISPS Zone.

2. Harbour layout

Option 1.2 considers the reconfiguration of the existing landside space, keeping the existing marine facilities as per the current arrangement for the commercial activities.

The proposed layout is as shown in Figure 1.

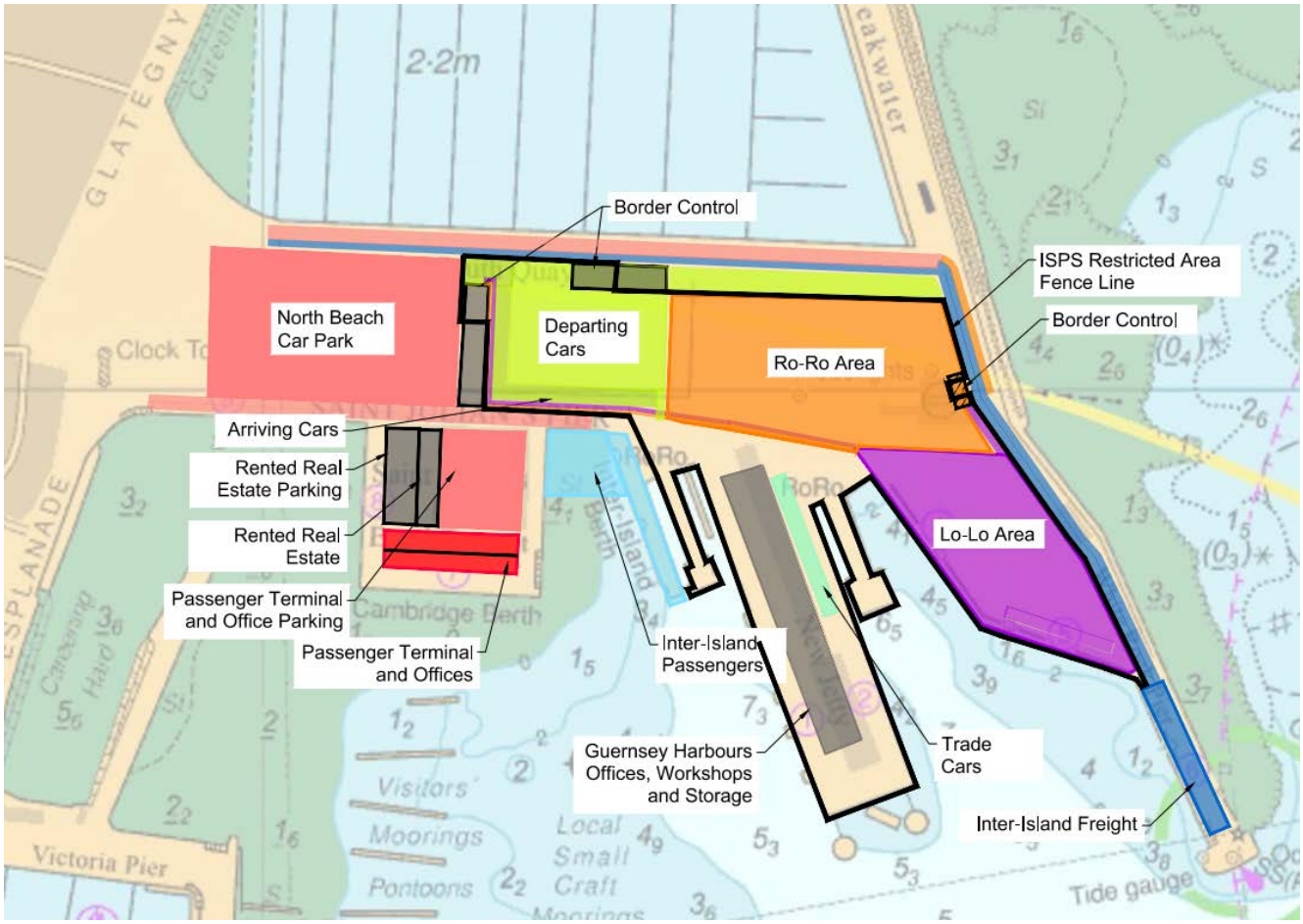

Figure 1: Layout for reconfiguration of the existing landside areas – Option 1.2

Option 1.2 does not provide sufficient space for the Blue Economy Building [non office]. To suit this spatial requirement, Option 1.2a presents a solution which consists on the extension of Cambridge berth to provide sufficient space to accommodate the Blue Economy Building [non office]. The remainder of the proposed areas remain the same as for Option 1.2. The proposed layout for Option 1.2a is shown in Figure 2.

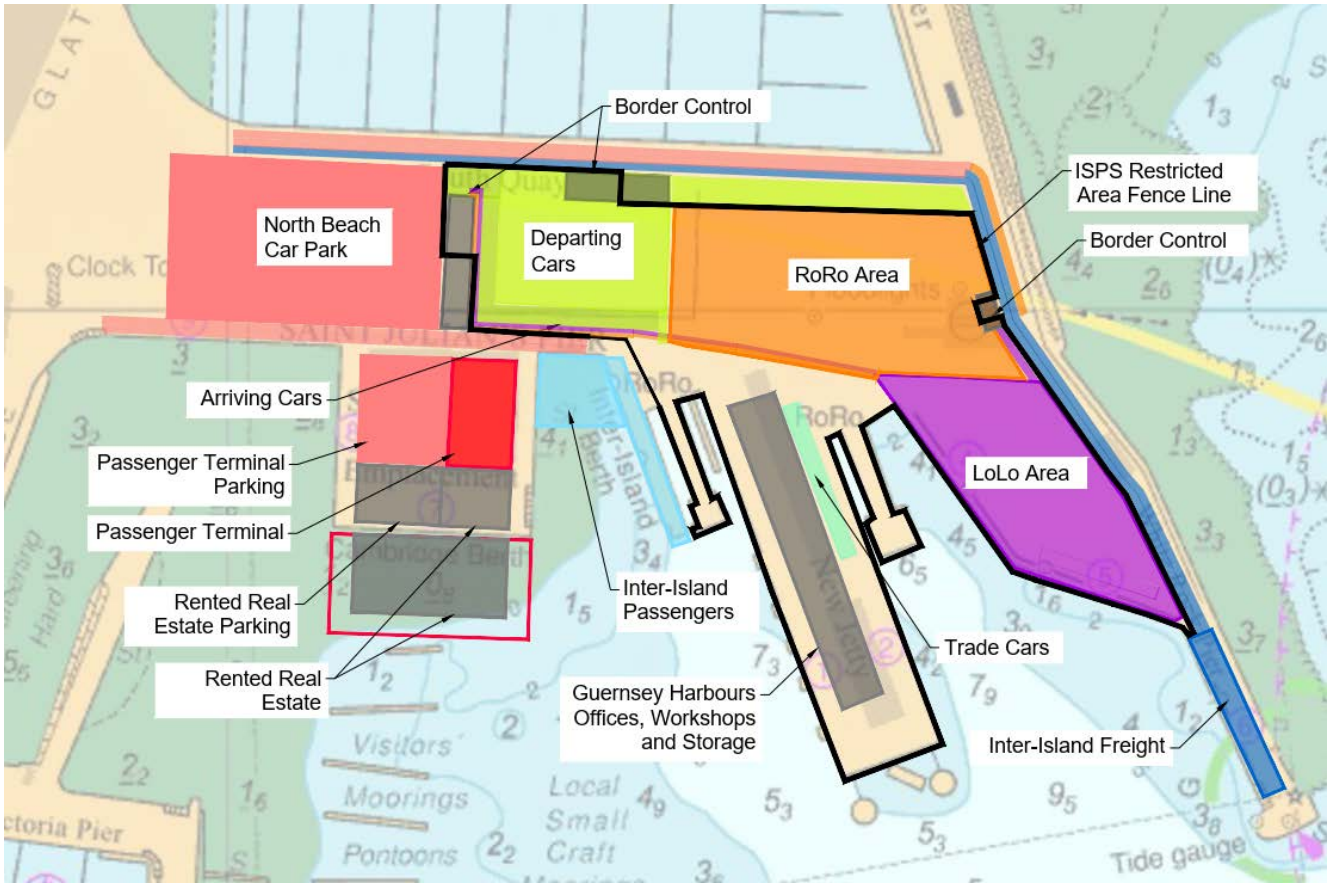

Figure 2: Layout for reconfiguration of the existing landside areas considering Cambridge berth extension – Option 1.2a

The terminal has been reconfigured to improve traffic paths by reducing conflict areas and segregating traffic flows. Figure 1 shows the proposed traffic routes for the different sectors.

Private vehicles enter the Harbour along the north side of the South Quay access road, check-in and then queue west to east in the marshalling area. Inbound cars pass through the Customs building (to the west) prior to exiting the harbour via St Julian's Pier. International freight traffic enters the Harbour along the South Quay access road and checks-in through the ISPS gate at the north eastern entrance. The international freight traffic remains within the ISPS until it exits the port via St Julian's Pier. Inter-island freight traffic enters and exits the port along the South Quay and remains outside of the ISPS boundary throughout.

Private vehicles and foot passengers accessing the international passengers area enter and exit the port along St Julian's Pier access road.

Foot passengers and vehicles access the inter-island passengers berth following the pedestrian designated paths along St Julian's Pier.

3. Option description

Option 1.2 considers the reconfiguration of the existing landside for the RoRo, LoLo and International passengers areas. The remaining areas of the Port are to remain as per the current arrangement.

3.1 Berths

Existing berths in general are not required to be modified for Option 1.2.

3.2 Landside space

The following subsections describe the landside modifications Option 1.2 considers for the different sectors.

3.2.1 LoLo

The existing LoLo and RoRo areas are designed to enable fluctuation of demand for space between LoLo and RoRo. The LoLo yard currently has 81 Twenty-foot Ground Slots (TGS). The high scenario forecasts a future requirement of 87 TGS. This is provided in two different areas within the designated LoLo landside. The main ground slots area for the containers provides space for 70 containers and a smaller area for 17 containers will be used for stripping and stuffing. As the forecast demand for RoRo is that it will reduce post 2030, the LoLo yard could take a greater part of the designated area. Option 1.2 would provide an easy transition for required space between RoRo and LoLo to cater for any potential demand changes.

3.2.2 RoRo

The spatial requirements showed that the number of trailer spaces required within the RoRo yard to accommodate the inbound and outbound unaccompanied trailers for the 2050 high scenario is 120 trailer spaces. However, the number of available trailer spaces is currently 90. Therefore, to accommodate the increase in the trailer spaces required, it is necessary to extend the RoRo storage yard to the existing car marshalling area and North Beach Car Park, to the West. Trailers are recommended to be orientated at 45° to minimise the required draw forward distance and manoeuvring area between rows of trailers. The trailer rows aligned north to south, provide the most compact solution and are better for the loading and unloading operations.

The current area used for car marshalling has 4,200 m^2. To meet future requirements, an area of 5,975 m^2 is required. As the RoRo yard is to expand and use part of the existing car marshalling area, the new car marshalling area shall be located to the west of the RoRo storage yard, in close proximity to a proposed new/relocated Customs and Immigration facility.

The area dedicated to car imports and exports is to remain unaltered.

3.2.3 International passengers

The international passenger terminal and the Blue Economy buildings are to be located on Cambridge berth and the existing Harbour Offices, currently located within Cambridge berth, are to be demolished. These are to be reinstated on the New Jetty, after demolishing the existing offices and passenger terminal.

The departures area of the terminal shall be located within the ISPS boundary and passengers are to be transferred by bus. An alternative enclosed passenger access structure could be created at an additional cost to avoid transfer by bus if this is deemed undesirable.

3.2.4 Inter-island freight

The inter-island freight landside area is to remain unaltered.

3.2.5 Inter-island passengers

The inter-island passengers landside area is to be increased. An area of approximately 500 m^2 in between the inter-island and Cambridge berths is proposed to be reclaimed and filled, to create additional drop off areas for inter-island passengers.

3.3 Facilities

The existing Customs and Immigration office is located to the east of the RoRo yard. To improve traffic flow, it is recommended to demolish this building, replacing it with a larger Customs and Immigration office towards the West of the RoRo yard with two small offices at the north and north east of the site at the entrances designated for private cars and for international freight, respectively.

Within the International passengers area, landside facilities are required to provide sufficient parking spaces and drop off areas for international passengers. As the offices within Cambridge berth are proposed to be demolished, car park and drop off areas can be accommodated within Cambridge berth too, as well as the Blue Economy Building, which is also proposed to be demolished from the New Jetty.

The North Beach Car Park, outside of the Port area, is reduced and is outside Guernsey Harbours requirements. If the car park space is required to be re-established additional car parking could be provided by creating two levels to accommodate the same number of vehicles as existing. An estimation of the additional land required from the North Beach Car Park to meet the high scenario forecast has been made. A total of 5,000 m^2 are likely to be required.

3.4 Access and ISPS fence

The following subsections describe the access, traffic routes (see Figure 1) and ISPS limitations for each sector.

The South Quay has currently two lanes (one inbound and one outbound). An additional lane is required to accommodate the traffic entering the Port and accessing the Eastern Arm, and no additional lanes are required to accommodate the traffic exiting the Port, North Beach Car Park and Eastern Arm.

St Julian's Pier currently has two outbound lanes, which are sufficient to accommodate the traffic exiting the Port. An inbound lane is yet required to provide access to the New Jetty. To accommodate this, parking spaces to the south of the North Beach Car Park could potentially be used.

Three lanes should be available at the northern port entrance, one to provide access (inbound) to the LoLo and RoRo yard and two (inbound and outbound) to provide access to the inter-island freight area. There are currently two lanes (one inbound and one outbound) and therefore, an extra lane(inbound) should be created.

The RoRo, LoLo and departures zone of the passenger terminal are within the ISPS boundary. Inter-island freight and passengers, parking spaces/dropoff areas and the arrivals area of the international passenger terminal are outside of the ISPS area.

3.4.1 LoLo freight

LoLo freight vehicles access the Port along the north side of the South Quay road access using the north eastern entrance. LoLo traffic exits the Port along the south aide of St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.2 RoRo freight

RoRo freight vehicles access the Port along the South Quay road access, using the north eastern entrance. RoRo traffic exits the Port along St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.3 Private cars

Private cars access the Port along the South Quay access road, using the north entrance (only for private cars). Cars exit the Port along St Julian's Pier access road prior to enter the Weighbridge Roundabout.

3.4.4 International passengers

The landside access/exit for international passengers is along St Julian's Pier access road.

3.4.5 Inter-island freight

Inter-island freight vehicles are to access the Port along the South Quay access road, using the north eastern entrance. These vehicles will exit the port following the same route as they are outside of the ISPS boundary.

3.4.6 Inter-island passengers

Inter-island passengers (pedestrians and potential personal/ drop off vehicles) are to access the Inter-island berth along St Julian's Pier access road. An existing drop off area is located in close proximity to the berth.

4. Location and spatial requirements

Table 1 provides a comparison of the spatial requirements identified and Option 1.2.

	Spatial requirements identified	Option 1.2
LoLo		
Berth	1 no. 120 m long berth with a depth of 6.4 m	✓*
Landside space	8,700 m^2 should be provided for Twenty-feet Ground Slots	✓
Facilities	Two mobile cranes should be provided Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided.	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint. Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the container storage area and to the local road network	✓
Location requirements	The LoLo berth and yard should be located within the ISPS area of the port	✓
RoRo		
Berth	2 No. 155 m long berths with a depth of 6.6 m	✓*
Landside space	8,400 m^2 should be provided for 120 trailer spaces 5,975 m^2 should be provided for private and small commercial vehicles 576 m^2 should be provided for car imports and exports	✓
Facilities	RoRo storage yard and private and small commercial vehicles- Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided No specific facilities required for car imports and exports	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the trailer storage area and to the local road network Landside access is required to the marshalling yard and from the Border Control / Customs building for cars and small commercial vehicles. The	✓

	Spatial requirements identified	Option 1.2
	landside access route should be outside the ISPS Zone. The Border Control / Customs Building should be located on the edge of the ISPS Zone such that the ISPS Zone effectively runs through the point when vehicles have been cleared The area for storing imported and exported cars needs to be located in close proximity to the RoRo ramps and within the ISPS Zone	
Location requirements	The RoRo storage yard should be located within the ISPS area of the port and in close proximity to the RoRo berths The car and small commercial vehicle facility need to be at the same location as the foot passenger facility as the vehicles and foot passengers arrive on the same vessels Landside access is required to and from the car storage area	✓
International passengers and vehicular traffic		
Berth	2 No. 155 m long berths with a depth of 6.6 m (RoRo freight) 1 No. 50 m long berth with a depth of -3.3 mCD	✓*
Landside space	2600 m^2 should be provided for the passenger terminal 2000 m^2 should be provided for parking spaces and drop off areas	✓
Facilities	Passenger areas should include welfare facilities, retail areas and a café/restaurant area(s)	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint. Navigation channels and turning circles shall comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the passenger terminal for buses, taxis, private cars and foot passengers. The landside access route should not enter the ISPS port security area The departure area of the terminal needs to be within the ISPS zone and the public area needs to be outside the ISPS Zone. Therefore, the terminal needs to be as close to the boundary of the ISPS Zone as possible	✓
Location requirements	The terminal for day passengers should be located within walking distance of St Peter Port Harbour commercial area. For other passengers being located close to St Peter Port Harbour commercial area is not critical	✓
Inter-island passengers		
Berth	1 No. 80 m long berth with a depth of -3.4 mCD depth	✓
Landside space	Based on the assumption of 2 people standing per square metre, which leaves enough room between passengers for luggage and personal space, the required area is approximately 340 m^2, assuming all vessels are leaving at similar times and are fully booked	✓
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓

	Spatial requirements identified	Option 1.2
Access and ISPS	All tide access is required for inter-island charter vessels which have a maximum draught of 2.1 m Landside access is required to the berth for foot passengers with adequate day parking nearby, the landside access route should not enter the ISPS Zone	✓
Location requirements	Inter-island passenger services need to be located in St Peter Port in close proximity to the town centre	✓
Inter-island freight		
Berth	1 No. 40 m long berth with a depth of 4 m	✓*
Landside space	400 m^2 should be provided for storage	✓
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	All tide access where possible or as a minimum, sufficient depth at MLWS is required for inter-island freight vessels which currently have a maximum draught of 3.05m Landside access must be provided for vehicles, including mobile cranes and container lorries	✓
Location requirements	There are no specific location requirements for inter-island freight	✓

Table 1: Comparison of Option 1.2, Do Minimum, with spatial requirements.

5. Assumptions

- It has been assumed that demolition of existing buildings is possible subject to reinstatement of these within the Port area

- It is assumed that the RoRo and LoLo area will remain shared and can be flexible in accordance with demand

- A standard car parking space has been assumed as 4.8 m x 2.4 m, equal to 11.52m^2

- The total number of Twenty-foot ground slots (TGS) required has been estimated based on the number of Twenty-foot Equivalent Units per annum, the dwell time, peak factor (1.3 in accordance with the FHRS (Halcrow, 2010)), the operational days per annum (assuming 312 days which is equivalent to 6 days per week) and the stack height

- The total number of trailers has been estimated based on the number of trailers per annum, the peak factor (1.5 in accordance with the FHRS (Halcrow, 2010)), dwell time and the number of service days (assuming 365 days).The spatial requirements for the waiting area is based on the assumption of 2 people standing per square metre, which leaves enough room between passengers for luggage and personal space

- Sufficient space is provided for private cars to queue prior to access and after accessing the car marshalling area, assuming each vehicle takes up to 6.25 m

6. Costs

The implementation cost for Option 1.2 is between £ **27** and £**45** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

The cost of the car park is not included in the total cost. If additional parking spaces cannot be provided elsewhere, a double deck or an underground car park would be required, with a cost of £14 and £25 million, respectively.

Guernsey Future Harbour Requirements 2020

Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				06/07/2020	B2382200
			Estimated By:		ILE
Sheet Title:			Jacobs		
Option 1.2 Cost Summary			Status of Design:		
			Concept/Planning		

Item	Quantity	Units	Unit Cost	Subtotals	Total Cost
Preliminaries					£ 3,920,700.0
General Conditions and Mod/Demob	20%	-	-	£ 3,920,700.00	
Pavement					£ 1,540,000.0
Concrete pavement	28,000	EA	£ 55.	£ 1,540,000.00	
Buildings					£ 18,063,600.0
Customs/Harbour Offices	5,700	Sq.m	£ 1,192.0	£ 6,794,400.00	
Blue Economy building	1,600	Sq.m	£ 2,516.0	£ 4,025,600.00	
Passengers terminal International	2,600	Sq.m	£ 2,516.0	£ 6,541,600.00	
Building dismantling	6,000	Sq.m	£ 117.	£ 702,000.00	
Reclamation (Inter-island passengers)					£ 289,800.
Supply and fill material	4,000	Cu.m	£ 69.	£ 276,000.00	
Ground Improvement	1	EA	£ 13,800.0	£ 13,800.00	
Revetment (Inter-island passengers)					£ 230,800.
Rock Armor	1,000	Cu.m	£ 74.	£ 74,000.00	
Underlayer	400	Cu.m	£ 72.	£ 28,800.00	
Core Rock	2,000	Cu.m	£ 64.	£ 128,000.00	
Access bridge					£ 1,000,000.0
Fixed bridge tunnel for pedestrian access	110	m	£ 8,055.60	£ 886,116.00	
Steps and lifts	1	EA	£ 100,000.00	£ 100,000.00	
				Infrastructure Subtotal	**£ 25,044,900.0**
Planning, Design, Permits, and Construction Support				7%	£ 1,753,000.0
Infrastructure Construction Total					**£ 27,000,000.0**
Optimism Bias				66%	£ 18,000,000.0
				Total Project Cost	**£ 45,000,000.0**

*Percentages used for Design and Permits only consider infrastructure cost and excludes cost of equipment.

Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

If Option 1.2a is implemented, i.e., Cambridge berth is extended to allow for the construction of the Blue Economy Building [Non Office], the implementation cost is between £ **47** and £**78** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

Guernsey Future Harbour Requirements 2020

Jacobs

Activity and Location:		Date:	Job Number:
St Peter Port, Guernsey		06/07/2020	B2382200
	Estimated By:	ILE	
Sheet Title:	Jacobs		
Option 1.2b Cost Summary	Status of Design:		
	Concept/Planning		

Item	Quantity	Units	Unit Cost	Subtotals	Total Cost
Preliminaries					£ 5,254,200.00
General Conditions and Mod/Demob	20%	-	-	£ 5,254,200.000	
Pavement					£ 1,540,000.00
Concrete pavement	28,000	EA	£ 55.00	£ 1,540,000.000	
Buildings					£ 24,731,000.00
Customs/Harbour Offices	5,700	Sq.m	£ 1,192.00	£ 6,794,400.000	
Blue Economy building [Office]	1,600	Sq.m	£ 2,516.00	£ 4,025,600.000	
Passengers terminal International	2,600	Sq.m	£ 2,516.00	£ 6,541,600.000	
Blue Economy building [Non Office]	2,650	Sq.m	£ 2,516.00	£ 6,667,400.000	
Building dismantling	6,000	Sq.m	£ 117.00	£ 702,000.000	
Reclamation (Inter-island passengers)					£ 289,800.00
Supply and fill material	4,000	Cu.m	£ 69.00	£ 276,000.000	
Ground Improvement	1	EA	£ 13,800.00	£ 13,800.000	
Reclamation (Cambridge berth)					£ 3,115,400.00
Supply and fill material	43,000	Cu.m	£ 69.00	£ 2,967,000.000	
Ground Improvement	1	EA	£ 148,350.00	£ 148,400.000	
Revetment (Inter-island passengers)					£ 230,800.00
Rock Armor	1,000	Cu.m	£ 74.00	£ 74,000.000	
Underlayer	400	Cu.m	£ 72.00	£ 28,800.000	
Core Rock	2,000	Cu.m	£ 64.00	£ 128,000.000	
Quay					£ 8,179,500.00
Blockwork Quay Wall	190	Lin m	£ 41,000.00	£ 7,790,000.00	
Quay Furniture	1	EA	£ 389,500.00	£ 389,500.00	
Access bridge					£ 1,000,000.00
Fixed bridge tunnel for pedestrian access	110	m	£ 8,055.600	£ 886,116.000	
Steps and lifts	1	EA	£ 100,000.000	£ 100,000.000	
				Infrastructure Subtotal	**£ 44,340,700.00**
Planning, Design, Permits, and Construction Support				7%	£ 3,104,000.00
Infrastructure Construction Total					**£ 47,000,000.00**
Optimism Bias				66%	£ 31,000,000.00
				Total Project Cost	**£ 78,000,000.00**

*Percentages used for Design and Permits only consider infrastructure cost and excludes cost of equipment.

Future Harbour Requirements Study 2020

Option 1.3 - Technical Note

B2382200-JAC-02-XX-TN-C-0004 | P02

08 October 2020

States of Guernsey

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	28/08/20	ISSUE	IV	MSS	MSS	MSS
P02	08/10/20	Final	IV	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 1.3 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0004
Revision:	P02
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark Sherlock-Smith
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File Name:	Option 1.3 - technical note P02

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Contents

1. Introduction

The FHR 2020 study identifies that all commercial sectors (with the exception of bulk liquids) can be provided by a Do Minimum option. This demonstrates that for most sectors there is no harbour specific requirement to relocate services outside of the current harbours or to expand current berth areas. However, future spatial requirements do require a modification to the landside area to meet base or high demand.

Our spatial requirements and demand study of the operations in St. Peter Port Harbour revealed the need of increasing the land and berth space for the commercial sectors and the reorganisation/provision of the landside facilities considering the public and the security areas to optimize traffic routes and security controls within the port.

The option we consider in this technical note consists of the reconfiguration of the existing St Peter Port Harbour to provide facilities to better suit current commercial needs and meet commercial forecast (high scenario) requirements. Note that leisure sectors are considered separately in another technical note.

This report considers the Do Minimum Option 1.3 for St Peter Port Harbour commercial sectors. The main difference with Option 1.1 and Option 1.2 is the location of the international passenger terminal and car parking spaces/drop off areas above the proposed car marshalling yard and the refurbishment of the offices in Cambridge berth to accommodate the Blue Economy building, and Guernsey Harbour offices on the New Jetty.

The key considerations used in the development of the option are:

1. Minimise construction of marine infrastructure and use existing landside areas as far as reasonably practical, minimising loss of public access areas.
2. Improve traffic flows within conflict areas, and segregate inbound and outbound traffic.
3. Increase freight marshalling.
4. Increase all traffic queuing room (inbound and outbound) to accommodate forecast requirements.
5. Maintain foot passenger access to the Cambridge Berth, Inter-island berth and New Jetty passenger terminal.
6. Maintain the LoLo berth and yard, RoRo berth and yard, departure area of the international passengers and car imports and exports area within the ISPS Zone.

2. Harbour layout

Option 1.3 considers the reconfiguration of the existing landside space, keeping the existing marine facilities as per the current arrangement for the commercial activities.

The proposed layout is as shown in Figure 1.

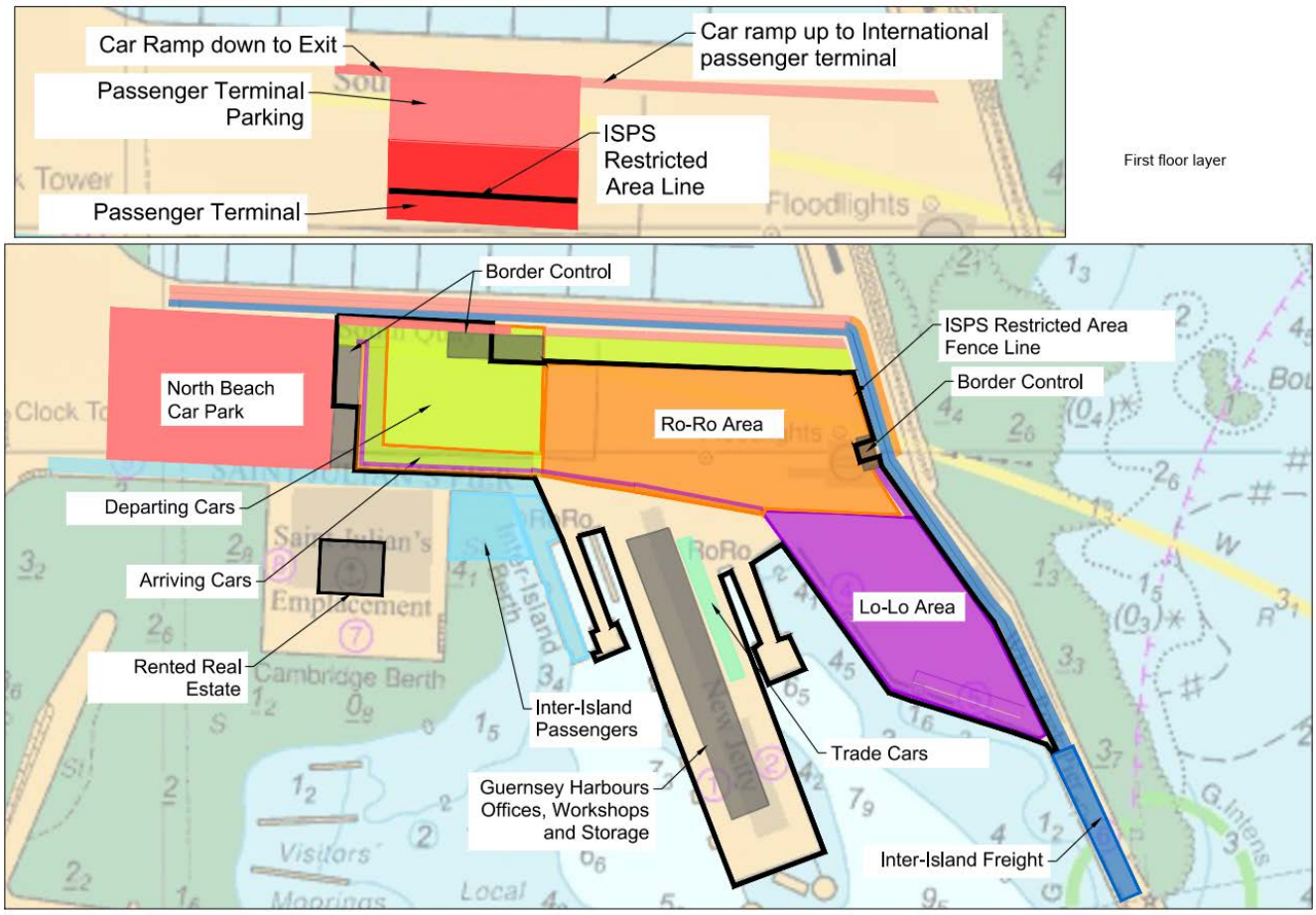

Figure 1: Layout for reconfiguration of the existing landside areas – Option 1.3

The terminal has been reconfigured to improve traffic paths by reducing conflict areas and segregating traffic flows. Figure 1 shows the proposed traffic routes for the different sectors.

Private vehicles enter the Harbour along the north side of the South Quay access road, check-in and then queue west to east in the marshalling area. Inbound cars pass through the Customs building (to the west) prior to exiting the harbour via St Julian's Pier. International freight traffic enters the Harbour along the South Quay access road and checks-in through the ISPS gate at the north eastern entrance. The international freight traffic remains within the ISPS until it exits the port via St Julian's Pier. Inter-island freight traffic enters and exits the port along the South Quay and remains outside of the ISPS boundary throughout.

Private vehicles and foot passengers accessing the international passengers area, created above the marshalling area, enter and exit the port along the ramps on the South Quay access road.

Foot passengers and vehicles access the inter-island passengers berth following the pedestrian designated paths along St Julian's Pier.

3. Option description

Option 1.3 considers the reconfiguration of the existing landside for the RoRo, LoLo and International passengers areas. The remaining areas of the Port are to remain as per the current arrangement.

3.1 Berths

Existing berths in general are not required to be modified for Option 1.3.

3.2 Landside space

The following subsections describe the landside modifications Option 1.3 considers for the different sectors.

3.2.1 LoLo

The existing LoLo and RoRo areas are designed to enable fluctuation of demand for space between LoLo and RoRo. The LoLo yard currently has 81 Twenty-foot Ground Slots (TGS). The high scenario forecasts a future requirement of 87 TGS. This is provided in two different areas within the designated LoLo landside. The main ground slots area for the containers provides space for 70 containers and a smaller area for 17 containers will be used for stripping and stuffing. As the forecast demand for RoRo post 2030 is that it will reduce, the LoLo yard could take a greater part of the designated area. Option 1.3 would provide an easy transition for required space between RoRo and LoLo to cater for any potential demand changes.

3.2.2 RoRo

The data analysis showed that the number of trailer spaces required within the RoRo yard to accommodate the inbound and outbound unaccompanied trailers is 120 for the 2050 high scenario. However, the number of available trailer spaces is currently 90. Therefore, to accommodate the increase in the trailer spaces required, it is necessary to extend the RoRo storage yard to the existing car marshalling area and North Beach Car Park, to the West. Trailers are recommended to be orientated at 45° to minimise the required draw forward distance and manoeuvring area between rows of trailers. The trailer rows aligned north to south, provide the most compact solution, and are better for the loading and unloading operations.

The current area used for car marshalling has 4,200 m^2. To meet future requirements, an area of 5,975 m^2 is required. As the RoRo yard is to expand and use part of the existing car marshalling area, the new car marshalling area should be located to the west of the RoRo storage yard, in close proximity to a proposed new/relocated Customs and Immigration facility.

The area dedicated to car imports and exports is to be kept on its current location, however its size is to be increased to accommodate the high scenario forecast demand, which requires 576 m^2.

3.2.3 International passengers

The international passenger terminal, car park and drop off areas are to be located above the proposed car marshalling yard. The existing passenger terminal on the New Jetty is to be demolished and Guernsey Harbour offices are to be built on this space. The existing offices on Cambridge berth are to be refurbished to accommodate the Blue Economy building spatial requirements.

The departures area of the terminal shall be located within the ISPS boundary and passengers will access the ferry through a pedestrian bridge that will connect with the finger located in the New Jetty.

3.2.4 Inter-island freight

The inter-island freight landside area is to remain unaltered.

3.2.5 Inter-island passengers

The inter-island passengers landside area is to be increased. An area of approximately 500 m^2 between the inter-island and Cambridge berths is proposed to be reclaimed and filled, to create additional drop off areas for inter-island passengers.

3.3 Facilities

The existing Customs and Immigration office is located to the east of the RoRo yard. To improve traffic flow, it is recommended that this building is demolished and a larger Customs and Immigration office is built towards the west of the RoRo yard with two small offices at the north and north east of the site, at the entrances designated for private cars and for international freight, respectively.

Within the International passengers area, landside facilities are required to provide sufficient parking spaces and drop off areas for international passengers.

The North Beach Car Park, outside of the Port area, is proposed to have two levels to accommodate the same number of vehicles as the existing capacity, as the area had to be reduced to accommodate the RoRo yard requirements. An estimation of the additional land required from the North Beach Car Park to meet the high scenario forecast has been made. A total of 6,000 m^2 is likely to be required.

3.4 Access and ISPS fence

The following subsections describe the access, traffic routes (see Figure 1) and ISPS limitations for each sector.

The South Quay has currently two lanes (one inbound and one outbound). An additional lane is required to accommodate the traffic entering the Port and accessing the Eastern Arm, and no additional lanes are required to accommodate the traffic exiting the Port, North Beach Car Park and Eastern Arm.

St Julian's Pier currently has two outbound lanes, which are sufficient to accommodate the traffic exiting the Port. An inbound lane is yet required to provide access to the New Jetty. To accommodate this, parking spaces to the south of the North Beach Car Park could potentially be used.

Three lanes should be available at the northern port entrance, one to provide access (inbound) to the LoLo and RoRo yard and two (inbound and outbound) to provide access to the inter-island freight area. There are currently two lanes (one inbound and one outbound) and therefore, an extra lane(inbound) should be created.

The RoRo, LoLo and departures zone of the passenger terminal are within the ISPS boundary. Inter-island freight and passengers, parking spaces/drop off areas and the arrivals area of the international passenger terminal are outside of the ISPS area.

3.4.1 LoLo freight

LoLo freight vehicles access the Port along the north side of the South Quay road access using the north eastern entrance. LoLo traffic exits the Port along the south aide of St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.2 RoRo freight

RoRo freight vehicles access the Port along the South Quay road access, using the north eastern entrance. RoRo traffic exits the Port along St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.3 Private cars

Private cars access the Port along the South Quay access road, using the north entrance (only for private cars). Cars exit the Port along St Julian's Pier access road prior to enter the Weighbridge Roundabout. High-sided vehicles access the Port along the South Quay access road, using the north eastern entrance instead, as RoRo freight vehicles.

3.4.4 International passengers

Private vehicles and foot passengers accessing the international passengers area enter and exit the port along the ramps on the South Quay access road .

3.4.5 Inter-island freight

Inter-island freight vehicles are to access the Port along the South Quay access road, using the north eastern entrance. These vehicles will exit the port following the same route as they are outside of the ISPS boundary.

3.4.6 Inter-island passengers

Inter-island passengers (pedestrians and potential personal/ drop off vehicles) are to access the Inter-island berth along St Julian's Pier access road. An existing drop off area is located in close proximity to the berth.

4. Location and spatial requirements

Table 1 provides a comparison of the spatial requirements identified and Option 1.3.

	Spatial requirements identified	Option 1.3
LoLo		
Berth	1 no. 120 m long berth with a depth of 6.4 m	✓*
Landside space	8,700 m^2 should be provided for Twenty-feet Ground Slots	✓
Facilities	Two mobile cranes should be provided Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint. Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the container storage area and to the local road network	✓
Location requirements	The LoLo berth and yard should be located within the ISPS area of the port	✓
RoRo		
Berth	2 No. 155 m long berths with a depth of 6.6 m	✓*
Landside space	8,400 m^2 should be provided for 120 trailer spaces 5,975 m^2 should be provided for private and small commercial vehicles 576 m^2 should be provided for car imports and exports	✓
Facilities	RoRo storage yard and private and small commercial vehicles- Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided No specific facilities required for car imports and exports	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the trailer storage area and to the local road network Landside access is required to the marshalling yard and from the Border Control / Customs building for cars and small commercial vehicles. The	✓

	Spatial requirements identified	Option 1.3
	landside access route should be outside the ISPS Zone. The Border Control / Customs Building should be located on the edge of the ISPS Zone such that the ISPS Zone effectively runs through the point when vehicles have been cleared The area for storing imported and exported cars needs to be located in close proximity to the RoRo ramps and within the ISPS Zone	
Location requirements	The RoRo storage yard should be located within the ISPS area of the port and in close proximity to the RoRo berths The car and small commercial vehicle facility need to be at the same location as the foot passenger facility as the vehicles and foot passengers arrive on the same vessels Landside access is required to and from the car storage area	✓
International passengers and vehicular traffic		
Berth	2 No. 155 m long berths with a depth of 6.6 m (RoRo freight) 1 No. 50 m long berth with a depth of -3.3 mCD	✓*
Landside space	2,600 m^2 should be provided for the passenger terminal 2,000 m^2 should be provided for parking spaces and drop off areas	✓
Facilities	Passenger areas should include welfare facilities, retail areas and a café/restaurant area(s).	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint. Navigation channels and turning circles shall comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the passenger terminal for buses, taxis, private cars and foot passengers. The landside access route should not enter the ISPS port security area The departure area of the terminal needs to be within the ISPS zone and the public area needs to be outside the ISPS Zone. Therefore, the terminal needs to be as close to the boundary of the ISPS Zone as possible	✓
Location requirements	The terminal for day passengers should be located within walking distance of St Peter Port commercial area. For other passengers being located close to St Peter Port commercial area is not critical	✓
Inter-island passengers		
Berth	1 No. 80 m long berth with a depth of 3.4 m	✓
Landside space	Based on the assumption of 2 people standing per square metre, which leaves enough room between passengers for luggage and personal space, the required area is approximately 340 m^2, assuming all vessels are leaving at similar times and are fully booked	✓
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓

	Spatial requirements identified	Option 1.3
Access and ISPS	All tide access is required for inter-island charter vessels which have a maximum draught of 2.1 m Landside access is required to the berth for foot passengers with adequate day parking nearby, the landside access route should not enter the ISPS Zone	✓
Location requirements	Inter-island passenger services need to be located in St Peter Port Harbour in close proximity to the town centre	✓
Inter-island freight		
Berth	1 No. 40 m long berth with a depth of 4 m	✓*
Landside space	400 m^2 should be provided for storage	✓
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	All tide access where possible or as a minimum, sufficient depth at MLWS is required for inter-island freight vessels which currently have a maximum draught of 3.05m Landside access must be provided for vehicles, including mobile cranes and container lorries	✓
Location requirements	There are no specific location requirements for inter-island freight	✓

Table 1: Comparison of Option 1.3, Do Minimum, with spatial requirements.

5. Assumptions

- It has been assumed that demolition of existing buildings is possible subject to reinstatement of these within the Port area

- It is assumed that the RoRo and LoLo area will remain shared and can be flexible in accordance with demand

- A standard car parking space has been assumed as 4.8 m x 2.4 m, equal to 11.52m^2

- The total number of Twenty-foot ground slots (TGS) required has been estimated based on the number of Twenty-foot Equivalent Units per annum, the dwell time, peak factor (1.3 in accordance with the FHRS (Halcrow, 2010)), the operational days per annum (assuming 312 days which is equivalent to 6 days per week) and the stack height

- The total number of trailers has been estimated based on the number of trailers per annum, the peak factor (1.5 in accordance with the FHRS (Halcrow, 2010)), dwell time and the number of service days (assuming 365 days).The spatial requirements for the waiting area are based on the assumption of 2 people standing per square metre, which leaves enough room between passengers for luggage and personal space

- Sufficient space is provided for private cars to queue prior to access and after accessing the car marshalling area, assuming each vehicle takes up to 6.25 m

6. Costs

The implementation cost is between £ **32** and **53** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

Guernsey Future Harbour Requirements 2020

Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				18/08/2020	B2382200
			Estimated By:		ILE
Sheet Title:			Jacobs		
Option 1.3 Cost Summary			Status of Design:		
			Concept/Planning		

Item	Quantity	Units	Unit Cost	Subtotals	Total Cost
Preliminaries					£ 3,871,000.0
General Conditions and Mod/Demob	20%	-	-	£ 3,871,000.00	
Pavement					£ 1,265,000.0
Concrete pavement	23,000	EA	£ 55.	£ 1,265,000.00	
Buildings					£ 18,090,000.0
Customs/Harbour Offices	5,700	Sq.m	£ 1,192.0	£ 6,794,400.00	
Blue Economy building (office)	1,750	Sq.m	£ 2,516.0	£ 4,403,000.00	
Passengers terminal International	2,600	Sq.m	£ 2,516.0	£ 6,541,600.00	
Building dismantling	3,000	Sq.m	£ 117.	£ 351,000.00	
Reclamation (Inter-island passengers)					£ 289,800.
Supply and fill material	4,000	Cu.m	£ 69.	£ 276,000.00	
Ground Improvement	1	EA	£ 13,800.0	£ 13,800.00	
Revetment (Inter-island passengers)					£ 230,800.
Rock Armor	1,000	Cu.m	£ 74.	£ 74,000.00	
Underlayer	400	Cu.m	£ 72.	£ 28,800.00	
Core Rock	2,000	Cu.m	£ 64.	£ 128,000.00	
Car marshalling area structure					£ 5,250,000.0
Building	10,000	Cu.m	£ 525.	£ 5,250,000.00	
Access bridge					£ 600,000.
Fixed bridge tunnel for pedestrian access	65	m	£ 8,055.60	£ 523,614.00	
Steps and lifts	1	EA	£ 100,000.00	£ 100,000.00	
				Infrastructure Subtotal	**£ 29,596,600.0**
Planning, Design, Permits, and Construction Support				7%	£ 2,072,000.0
Infrastructure Construction Total					**£ 32,000,000.0**
Optimism Bias				66%	£ 21,000,000.0
				Total Project Cost	**£ 53,000,000.0**

*Percentages used for Design and Permits only consider infrastructure cost and excludes cost of equipment.

The cost of the car park is not included in any of the total costs. If additional parking spaces cannot be provided elsewhere, a double deck or an underground car park would be required, with a cost of £14 and £25 m respectively.

Future Harbour Requirements Study 2020

Option 2.1 - Technical Note

B2382200-JAC-02-XX-TN-C-0005 | P02

08 October 2020

States of Guernsey

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	28/08/20	ISSUE	IV	CH	MSS	MSS
P02	08/10/20	Final	IV	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 2.1 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0005
Revision:	P02
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark SherlockSmith
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File Name:	Option 2.1 - Technical note P02

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Contents

1. Introduction

The FHR 2020 study identifies that all commercial sectors (with the exception of bulk liquids) can be provided by a Do Minimum option. These Options are provided in Option 1.1 -1.3. As part of the requête, options outside the Harbours are also being considered. The Options Development Report identified that a new harbour facility located East of QEII Marina provides a suitable location for commercial activities.

The option presented in this technical note consists of relocating commercial activities currently located in St Peter Port Harbour to East of QEII Marina. The new harbour will need to suit current commercial needs and meet commercial forecast (high scenario) requirements. Note that leisure sectors are considered separately in another technical note.

The spatial requirements and demand study identified that it will be necessary to increase the land and berth space for the commercial sectors as well as to reorganize the facilities, public and secure areas, and to optimize traffic routes and security controls within St Peter Port Harbour. Layout presented as Option 2.1 in this note provides a solution where no dredging is required.

The key considerations used in the development of Option 2.1 are:

1. Minimise/eliminate dredging requirements for the construction of a new harbour.

2. Provide improved berth facilities: increased depths and lengths suitable for full tidal conditions.

3. Incorporate potential for inert waste requirements.

4. Remove commercial activities from St Peter Port Harbour and free landside space within the existing harbour.

5. Maintain the LoLo berth and yard, RoRo berth and yard, departure area of the international passengers and car imports and exports area within the ISPS Zone.

2. Harbour layout

The layout for Option 2.1 consists of an extensive land reclamation and the construction of two breakwaters.

The layout of the reclaimed land aims to minimise dredging by building out into deeper water.

The entrance of the harbour is located towards the south east, with a southern and eastern breakwater protecting the berths from the south and south-eastern waves. The eastern breakwater will be extended along the perimeter of the land reclamation to protect and support the infilling process.

The proposed layout for Option 2.1 is shown in Figure 1.

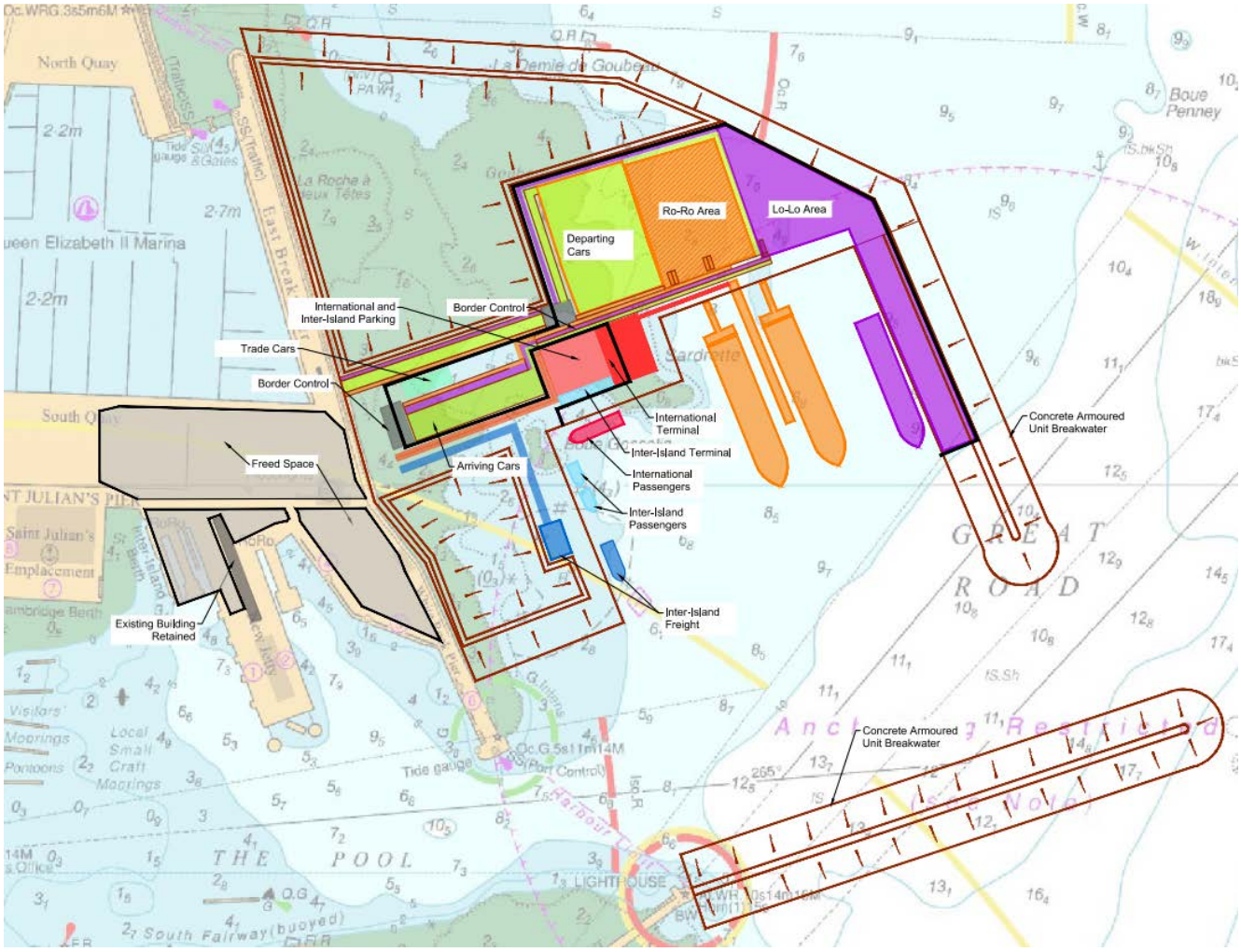

Figure 1: Layout of new Harbour East QEII – Option 2.1

3. Option description

Option 2.1 consists of moving all commercial activities outside St Peter Port Harbour.

3.1 Berths

The following subsections describe the berth provisions Option 2.1 considers for the different sectors.

3.1.1 LoLo

One LoLo berth is provided at the sheltered side of the new eastern breakwater. A quay will be provided in this side to accommodate the cranes and equipment needed for undertaking safe, secure and productive operations.

The berth requirement for the LoLo vessels expected is -6.4 mCD and the access depth requirement is -7.4 mCD. This is achieved without any dredging and providing all tide access and berthing. The length available for the LoLo berth in Option 2.1 is 150 m.

3.1.2 RoRo

Two RoRo berths are provided. The vessels will connect to the land with linkspans for the vehicles access and a finger between the ships to provide access for foot passengers. The berth requirement for the RoRo vessels expected is -6.6 mCD and the access depth requirement is -7.6 mCD. This is achieved without any dredging and providing all tide access and berthing.

The distance between berths has been considered according to recommendations in the Port's Designer Handbook (Thoresen,2014). These state that the distance between the berths should be at least two times the beam of the widest vessel plus 30 meters. The biggest vessel (RoRo) has a beam of 28 meters, so the distance between berths should be at least 86 meters.

3.1.3 International passengers

There are three International Passengers berths, two of them are the RoRo berths and the third is a ferry berth located in a quay provided at the west of the RoRo berths.

The berth requirement for the international passengers ferries is -3.3 mCD and the access depth requirement is -4.3 mCD. This is achieved without any dredging and providing all tide access and berthing. The length available for the international passengers berth is 70 m.

3.1.4 Inter-island freight

At the most inner part of the new harbour a quay is provided for the Inter-Island traffic. The Inter-island Freight berth, with 52 m length, is located at the south of the Inter-island passengers berth.

The berth requirement for the Inter-island vessels expected is -4 mCD and the access depth requirement is -5 mCD. This is achieved without any dredging and providing all tide access and berthing.

3.1.5 Inter-island passengers

At the northern end of the quay an 80 m long berth is provided for Inter-Island passengers vessels.

The berth requirement for the Inter-island vessels expected is -3.1 mCD and the access depth requirement is -4.1 mCD. This is achieved without any dredging and providing all tide access and berthing.

3.2 Landside space

The new facilities are to be accommodated within the reclaimed area and distributed such that the different sectors are clearly delimited, keeping passengers separate from freight.

The following subsections describe the landside space provisions for Option 2.1 considers for the different sectors.

3.2.1 LoLo

LoLo landside area extends from the quay where the berth is located to the upper right corner of the land reclamation. Containers ground slots will be placed in this triangle shaped corner whilst the area by the quay will be used for loading/unloading operations and cranes traffic. The storage area needs to be sufficiently extent to accommodate 87 Twenty-foot Ground Slots. This is provided in two different areas within the designated LoLo landside. The main ground slots area for the containers provides space for 70 containers and a smaller area for 17 containers will be used for stripping and stuffing.

3.2.2 RoRo

The spatial requirements showed that the number of trailer spaces required within the RoRo yard to accommodate the inbound and outbound unaccompanied trailers for the 2050 high scenario is 120 trailer spaces.

Option 2.1 provides enough space to accommodate the area required for the trailer spaces. Trailers are recommended to be orientated at 45° to minimise the required draw forward distance and manoeuvring area between rows of trailers. The trailer rows aligned north to south, provide the most compact solution and are better for the loading and unloading operations.

The car marshalling needs an area of 5,975 m^2 to meet the requirements, and this is provided in Option 2.1. Both RoRo and car marshalling areas are together to optimise the border control and boarding operations (see Figure 1).

An area of 600 m^2 dedicated for car imports and exports (Trade cars in Figure 1) is provided right by the outbound customs and border controls.

3.2.3 International passengers

The International Passengers forecast requires a 2,600 m^2 terminal to meet future needs. This area is provided in Option 2.1.

As shown in Figure 1, the International Passengers terminal is located between the RoRo berths and the International Passengers ferry berth to enable access for foot passengers to both berths.

3.2.4 Inter-island freight

The land areas provided by the quay used by the Inter-island traffic is sufficiently extent to accommodate facilities and road accesses for the berths.

Inter-island freight demand forecast requires a landside area of at least 400 m^2 for the high scenario in 2050. Option 2.1. provides this space and regards the possibility of increasing this area if land reclamation is filled in entirely (see Figure 1).

3.2.5 Inter-island passengers

Inter-island passengers sector requires a small terminal independent from the International passengers terminal as inter-island passengers do not need to go through customs or passport control. This small terminal needs to be at least 340 m^2.

Option 2.1 provides this next to the International Passengers terminal. Having both terminals together makes the foot passengers access from outside the port and into the terminals easier as a drop off and parking area is provided for both terminals.

3.3 Facilities

Two customs and border control areas are provided in Option 2.1, one will be used for inbound access and the second will be used for outbound traffic.

In the area between the RoRo linkspans and the outbound customs area, enough space is provided for vehicle waiting lanes. Cars will queue in these lanes once they get out of the vessel and wait for their turn to go through passport controls.

Between the two RoRo berths, a finger for foot passengers is provided to access the vessels; vehicle access to the vessels is via the Linkspan. To avoid mixing vehicles and foot passengers a footbridge linking the finger and the International Passengers terminal is provided for foot passengers.

Within the foot passengers area, landside facilities are required to provide sufficient parking spaces and drop off areas. The required space for this area is 2,000 m^2 and is destined to foot passengers getting into the port either using taxis or hired cars and private cars. Option 2.1 provides this area between both passengers terminals as shown in Figure 1.

3.4 Access and ISPS fence

The distribution of the areas and accesses is designed to clearly and tidily separate public areas from security areas within the port. The ISPS line will go around the perimeter of the LoLo and RoRo landside areas and through the customs building. The Drop off and passenger parking area remains outside the security area and the ISPS line splits the passenger terminal between international and inter-island passengers.

The layout of Option 2.1 presented in Figure 1 identifies the access lanes and the ISPS line as the thick black line separating international and inter-island activities.

The following subsections describe the access provisions for Option 2.1 considers for the different sectors.

3.4.1 LoLo

LoLo freight vehicles access the Port along the north side of the South Quay road access using the north eastern entrance. The vehicles access the LoLo landside area by driving round the northern perimeter of the new port facilities. To get out of the port, two lanes are provided to queue before the outbound customs and border control. LoLo traffic exits the Port along the south aide of St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.2 RoRo freight

RoRo freight vehicles access the Port along the north side of the South Quay road access. The vehicles access the RoRo landside area by driving round the northern perimeter of the new port facilities. To get out of the port, one lane is provided to queue before the outbound customs and border control. RoRo traffic exits the Port along the south aide of St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.3 Private cars

Private cars access the Port along the north side of the South Quay road access. The vehicles access the car marshalling area by driving round the northern perimeter of the new port facilities, where two lanes are provided only for private cars. To get out of the port, seven lanes are provided to queue before the outbound customs and border control. Cars exit the Port along the south aide of St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.4 International passengers

International passengers access the Port along the north side of the South Quay road access. Taxis and private cars driving into the drop off area access the port using in and out lanes located at the south of the RoRo, LoLo and departing cars exit lanes.

International passengers do not need to go through customs or border control areas as vehicles do. These controls are provided inside the international passengers terminal.

3.4.5 Inter-island freight

Inter-island freight vehicles access the Port along the north side of the South Quay road access. In and out lanes are provided directly to the south part of the quay and into the inter-island freight area.

3.4.6 Inter-island passengers

Inter-island passengers access the Port along the north side of the South Quay road access. Taxis and private cars driving into the drop off area access the port using the same lanes as the international passengers.

Inter-island passengers do not need to go through customs or border control areas, they go straight into the inter-island passengers terminal and onto the ships.

3.5 Free space

By relocating commercial activities from St Peter Port harbour to the new harbour East of QEII, some existing space in St Peter Port harbour will become free. This space is approximately 30,000 m^2 and could potentially be repurposed.

Option 2.1 benefits from a considerably extent reclaimed area (152,000 m^2 approximately) and can easily accommodate the landside facilities of all commercial activities. Of this area, approximately 68,000 m^2 will probably be unused for the landside space required for the commercial activities within the port. The unused area has been left unfilled in the cost estimate in order to try to reduce the initial investment needed.

4. Spatial and location requirements

Table 1 shows a checklist of the facilities and landside areas distribution proposed for Option 2.1 which analyses if the spatial and location requirements identified in the Spatial requirements study are met.

	Spatial requirements identified	Option 2.1
LoLo		
Berth	1 no. 120 m long berth with a depth of 6.4 m	✓
Landside space	8,700 m^2 should be provided for 87 Twenty-feet Ground Slots	✓
Facilities	Two mobile cranes should be provided Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint. Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the container storage area and to the local road network	✓
Location requirements	The LoLo berth and yard should be located within the ISPS area of the port	✓
RoRo		
Berth	2 No. 155 m long berths with a depth of 6.6 m	✓
Landside space	8,400 m^2 should be provided for 120 trailer spaces 5,975 m^2 should be provided for private and small commercial vehicles 576 m^2 should be provided for car imports and exports	✓
Facilities	RoRo storage yard and private and small commercial vehicles- Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided No specific facilities required for car imports and exports	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the trailer storage area and to the local road network	✓

	Spatial requirements identified	Option 2.1
	Landside access is required to the marshalling yard and from the Border Control / Customs building for cars and small commercial vehicles. The landside access route should be outside the ISPS Zone. The Border Control / Customs Building should be located on the edge of the ISPS Zone such that the ISPS Zone effectively runs through the point when vehicles have been cleared The area for storing imported and exported cars needs to be located in close proximity to the RoRo ramps and within the ISPS Zone	
Location requirements	The RoRo storage yard should be located within the ISPS area of the port and in close proximity to the RoRo berths The car and small commercial vehicle facility need to be at the same location as the foot passenger facility as the vehicles and foot passengers arrive on the same vessels Landside access is required to and from the car storage area	✓
International passengers and vehicular traffic		
Berth	2 No. 155 m long berths with a depth of 6.6 m (RoRo freight) 1 No. 50 m long berth with a -3.3 mCD depth	✓
Landside space	2600 m^2 should be provided for the passenger terminal 2000 m^2 should be provided for parking spaces and drop off areas	✓
Facilities	Passenger areas should include welfare facilities, retail areas and a café/restaurant area(s)	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint. Navigation channels and turning circles shall comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the passenger terminal for buses, taxis, private cars and foot passengers. The landside access route should not enter the ISPS port security area The departure area of the terminal needs to be within the ISPS zone and the public area needs to be outside the ISPS Zone. Therefore, the terminal needs to be as close to the boundary of the ISPS Zone as possible	✓
Location requirements	The terminal for day passengers should be located within walking distance of St Peter Port Harbour commercial area. For other passengers being located close to St Peter Port Harbour commercial area is not critical	✓
Inter-island passengers		
Berth	1 No. 80 m long berth with -3.4 mCD depth	✓
Landside space	Based on the assumption of 2 people standing per square metre, which leaves enough room between passengers for luggage and personal space, the required area is approximately 340 m^2, assuming all vessels are leaving at similar times and are fully booked	✓
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓

	Spatial requirements identified	Option 2.1
Access and ISPS	All tide access is required for inter-island charter vessels which have a maximum draught of 2.1 m Landside access is required to the berth for foot passengers with adequate day parking nearby, the landside access route should not enter the ISPS Zone	✓
Location requirements	Inter-island passenger services need to be located in St Peter Port in close proximity to the town centre	✓
Inter-island freight		
Berth	1 No. 40 m long berth with a depth of 4 m	✓
Landside space	400 m^2 should be provided for storage	✓
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	All tide access where possible or as a minimum, sufficient depth at MLWS is required for inter-island freight vessels which currently have a maximum draught of 3.05m Landside access must be provided for vehicles, including mobile cranes and container lorries	✓
Location requirements	There are no specific location requirements for inter-island freight	✓

Table 1: Comparison of Option 2.1, new harbour East of QEII, with spatial requirements

5. Assumptions

- Considering all commercial activities going out of the port and into the new facility, the leisure facilities could be moved around according to the sector's necessities. This is presented in Options 5.1, 5.2 and 5.3

- Additionally, the berths provided in the new harbour, if available, could be potentially used for cruise mooring if the depth allows for it

- The land reclamation proposed might not be used entirely, therefore once a final design of the distribution of the landside areas accounting for traffic routes and other operations, part of the remaining landside area can be left unfilled and potentially used for inert waste material

- If Option 2.1 is selected for further development, a navigation simulation model would be necessary to ensure that there are no manoeuvring constraints at the berths

6. Costs

The implementation cost is between **£255** and **£423** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

In the cost estimate, the unused area of the land reclamation has been considered as unfilled, allowing to save approximately £20 million in land reclamation filling material.

Guernsey Future Harbour Requirements 2020

Activity and Location:				Date:		Job Number:	
St Peter Port, Guernsey				04/08/2020		B2382200	
			Estimated By:	IV			
Sheet Title:			Jacobs				
Option 2.1 Cost Estimate Summary			Status of Design:				
			Concept/Planning				
Item	**Quantity**	**Units**	**Unit Cost**	**Subtotals**		**Total Cost**	
Preliminaries						£	39,598,200.00
General Conditions and Mod/Demob	20%	-	-	£	39,598,200.00		
Breakwater East						£	22,818,100.00
Armour Units (CoreLoc/Xbloc)	64,313	Cu.m	£ 158.00	£	10,161,400.00		
Underlayer	38,588	Cu.m	£ 72.00	£	2,778,300.00		
Core Rock	154,350	Cu.m	£ 64.00	£	9,878,400.00		
Breakwater South						£	36,995,500.00
Armour Units (CoreLoc/Xbloc)	104,271	Cu.m	£ 158.00	£	16,474,900.00		
Underlayer	62,563	Cu.m	£ 72.00	£	4,504,500.00		
Core Rock	250,252	Cu.m	£ 64.00	£	16,016,100.00		
Revetment (Exposed)						£	12,794,600.00
Armour Units (CoreLoc/Xbloc)	36,061	Cu.m	£ 158.00	£	5,697,700.00		
Underlayer	21,637	Cu.m	£ 72.00	£	1,557,900.00		
Core Rock	86,547	Cu.m	£ 64.00	£	5,539,000.00		
Revetment (Sheltered)						£	11,435,800.00
Rock Armor	42,230	Cu.m	£ 74.00	£	3,125,000.00		
Underlayer	25,338	Cu.m	£ 72.00	£	1,824,300.00		
Core Rock	101,351	Cu.m	£ 64.00	£	6,486,500.00		
Revetment (South of Inter Island quay)						£	1,744,700.00
Rock Armor	6,443	Cu.m	£ 74.00	£	476,800.00		
Underlayer	3,866	Cu.m	£ 72.00	£	278,300.00		
Core Rock	15,462	Cu.m	£ 64.00	£	989,600.00		
Inner slope unfilled areas						£	1,582,300.00
Underlayer material	21,977	Cu.m	£ 72.00	£	1,582,300.00		
Quay						£	15,153,600.00
Blockwork Quay Wall	352	Lin m	£ 41,000.00	£	14,432,000.00		
Quay Furniture	1	EA	£ 721,600.00	£	721,600.00		
Port Facilities						£	11,300,000.00
Ro-Ro Linkspan	2	EA	£ 3,500,000.00	£	7,000,000.00		
Linkspan removal	1	EA	£ 300,000.00	£	300,000.00		
Finger Jetty	100	Lin m	£ 40,000.00	£	4,000,000.00		
Reclamation						£	67,857,700.00
Supply and fill material	936,614	Cu.m	£ 69.00	£	64,626,400.00		
Ground Improvement	1	EA	£ 3,231,320.00	£	3,231,300.00		
Pavement						£	8,080,050.00
Concrete pavement	73,455	Sq.m	£ 110.00	£	8,080,050.00		
Buildings						£	8,228,790.00
Customs/offices	1,280	Sq.m	£ 1,192.00	£	1,525,760.00		
Passengers terminal International	2,100	Sq.m	£ 2,516.00	£	5,283,600.00		
Passengers terminal Inter Island	440	Sq.m	£ 2,516.00	£	1,107,040.00		
Building dismantling	2,670	Sq.m	£ 117.00	£	312,390.00		
				Infrastructure Subtotal		**£**	**238,000,000.00**
Planning, Design, Permits, and Construction Support				7%		£	16,660,000.00
Infrastructure Construction Total						**£**	**255,000,000.00**
Optimism bias				66%		**£**	**168,000,000.00**
				Total Project Cost		**£**	**423,000,000.00**

*Percentages used for Contingency, Design and Permits only consider infrastructure cost and excludes cost of equipment.

Future Harbour Requirements Study 2020

Option 2.2 - Technical Note

B2382200-JAC-02-XX-TN-C-0006 | P02

08 October 2020

States of Guernsey

-

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	28/08/20	ISSUE	IV	CH	MSS	MSS
P02	08/10/20	Final	IV	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 2.2 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0006
Revision:	P02
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark SherlockSmith
Author:	Isabel Vidal
File Name:	Option 2.2 - Technical note P02

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Contents

1. Introduction

The FHR 2020 study identifies that all commercial sectors (with the exception of bulk liquids) can be provided by a Do Minimum option. These Options are provided in Option 1.1 -1.3. As part of the requête, options outside the Harbours are also being considered. The Options Development Report identified that a new harbour facility located East of QEII Marina provides a suitable location for commercial activities.

The option presented in this technical note consists of relocating commercial activities currently located in St Peter Port Harbour to East of QEII Marina. The new harbour will need to suit current commercial needs and meet commercial forecast (high scenario) requirements. Note that leisure sectors are considered separately in another technical note.

The spatial requirements and demand study identified that it will be necessary to increase the land and berth space for the commercial sectors as well as to reorganise the facilities, public and secure areas, and to optimize traffic routes and security controls within St Peter Port Harbour.

After presenting Option 2.1 as an option which avoided all dredging, and considering the land reclamation extent needed for achieving, this Option 2.2 considers an alternative which does include dredging but reduces significantly the land reclamation extent.

The key considerations used in the development of Option 2.2 are:

1. Minimise land reclamation for the construction of a new harbour.

2. Provide improved berth facilities: increased depths and lengths suitable for full tidal conditions.

4. Remove commercial activities from St Peter Port Harbour and free landside space within the existing harbour.

5. Maintain the LoLo berth and yard, RoRo berth and yard, departure area of the international passengers and car imports and exports area within the ISPS Zone.

2. Harbour layout

Option 2.2 has been developed as a new harbour layout and considers land reclamation and breakwaters construction in conjunction with dredging to achieve the required berth depth.

The entrance of the harbour is located towards the south east, with a southern and eastern breakwater protecting the berths from the south and south-eastern waves. The eastern breakwater will be extended along the perimeter of the land reclamation to protect and support the infilling process.

The proposed layout for Option 2.2 is shown in Figure 1.

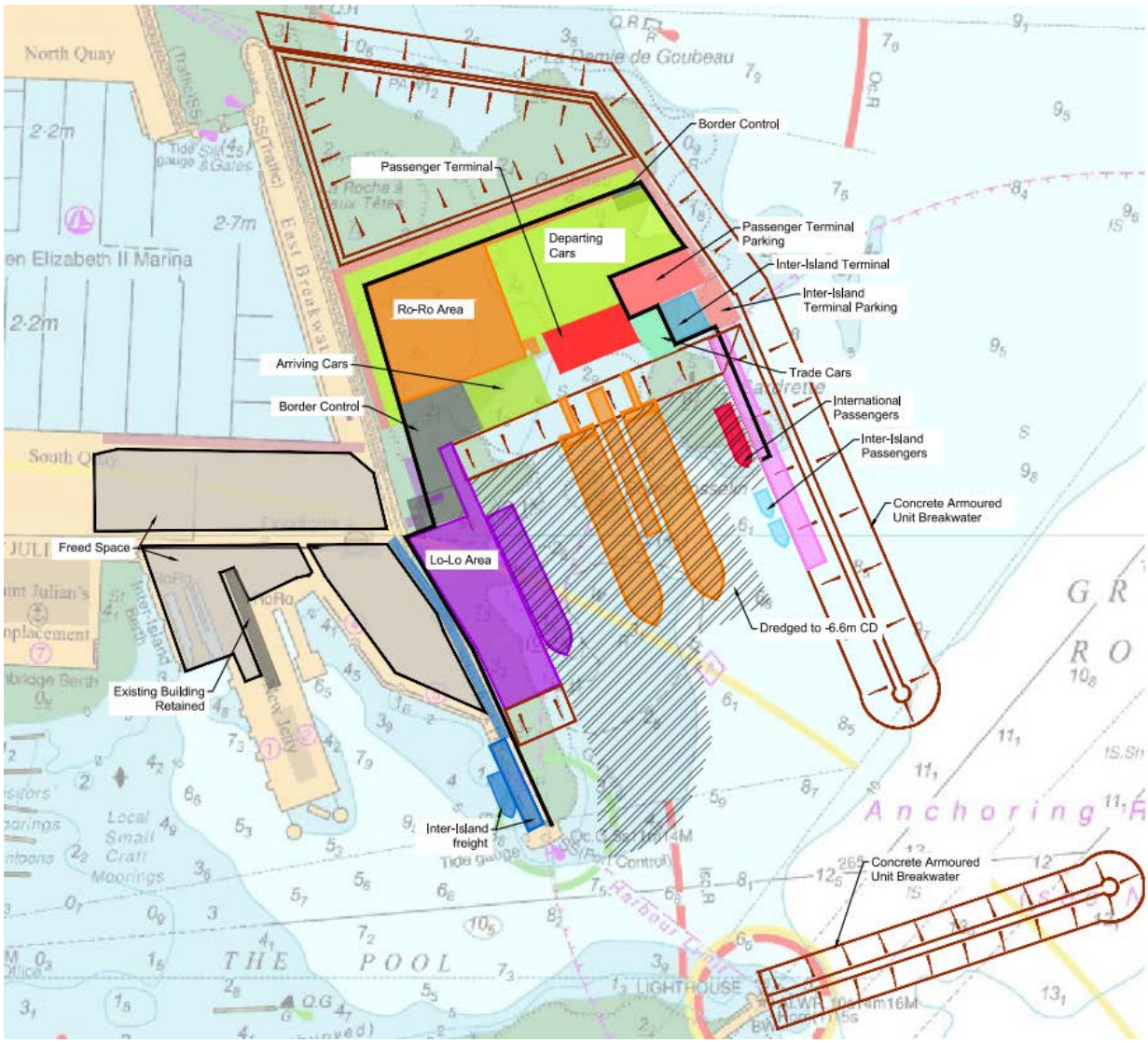

Figure 1: Layout of new Harbour East QEII – Option 2.2

3. Option description

For Option 2.2 all the St Peter Port harbour commercial activities are to be moved into the new harbour.

3.1 Berths

3.1.1 LoLo

One LoLo berth is provided at the inner side of the new harbour (see Figure 1). A quay will be provided in this side to accommodate the cranes and equipment needed for undertaking safe, secure and productive operations.

The berth requirement for the LoLo vessels expected is -6.4 mCD and the access depth requirement is -7.4 mCD. This is achieved through rock dredging to provide all tide access and berthing. The length available for the LoLo berth in Option 2.2 is 150 m.

3.1.2 RoRo

Two RoRo berths are provided. The vessels will connect to the land with linkspans for vehicles access and a finger between the ships to provide access for foot passengers. The berth requirement for the RoRo vessels expected is -6.6 mCD and the access depth requirement is -7.6 mCD. This is achieved through rock dredging to provide all tide access and berthing.

The distance between berths has been considered according to recommendations in the Port's Designer Handbook (Thoresen,2014). These state that the distance between the berths should be at least two times the beam of the widest vessel plus 30 meters. The biggest vessel (RoRo) has a beam of 28 meters, so the distance between berths should be at least 86 meters.

3.1.3 International passengers

There are three International Passengers berths, two of them are the RoRo berths and the third is a ferry berth located in a quay provided at the east of the RoRo berths, at the sheltered side of the breakwater, where a quay will be provided (see Figure 1).

The berth requirement for the international passengers ferries is -3.3 mCD and the access depth requirement is -4.3 mCD. This is achieved through dredging to provide all tide access and berthing. The length available for the international passengers berth is 70 m.

3.1.4 Inter-island freight

Inter-island freight berth remains where it currently is.

3.1.5 Inter-island passengers

Inter-island passengers berth is located at the south end of the quay where international passengers are (see Figure 1).

The berth requirement for the Inter-island vessels expected is -3.1 mCD and the access depth requirement is -4.1 mCD. This is achieved without any dredging and providing all tide access and berthing.

3.2 Landside space

The new facilities are to be accommodated within the reclaimed area and distributed such that the different sectors are clearly delimited, keeping passengers separate from freight.

The following subsections describe the landside space provisions for Option 2.2 considering each sector.

3.2.1 LoLo

LoLo landside area extends from the quay where the berth is located to the back of the land reclamation (White Rock Pier). Containers ground slots will be placed in this triangle shaped corner whilst the area by the quay will be used for loading/unloading operations and cranes traffic. The storage area needs to be sufficiently extent to accommodate 87 Twenty-foot Ground Slots. This is provided in two different areas within the designated LoLo landside. The main ground slots area for the containers provides space for 70 containers and a smaller area for 17 containers will be used for stripping and stuffing.

3.2.2 RoRo

The spatial requirements showed that the number of trailer spaces required within the RoRo yard to accommodate the inbound and outbound unaccompanied trailers for the 2050 high scenario is 120 trailer spaces.

Option 2.2 provides enough space to accommodate the area required for the trailer spaces. Trailers are recommended to be orientated at 45° to minimise the required draw forward distance and manoeuvring area between rows of trailers. The trailer rows aligned north to south, provide the most compact solution and are better for the loading and unloading operations.

The car marshalling needs an area of 5,975 m^2 to meet the requirements, and this is provided in Option 2.2. Both RoRo and car marshalling areas are together to optimise the border control and boarding operations (see Figure 1).

An area of 600 m^2 dedicated for car imports and exports (Trade cars in Figure 1) is provided.

3.2.3 International passengers

The International Passengers forecast requires a 2,600 m^2 terminal to meet future needs. This area is provided in Option 2.2.

As shown in Figure 1, the International Passengers terminal is located opposite the RoRo berths and the to enable access for foot passengers.

3.2.4 Inter-island freight

Inter-island freight landside area remains where it currently is.

3.2.5 Inter-island passengers

Inter-island passengers sector requires a small terminal independent from the International passengers terminal as inter-island passengers do not need to go through customs or passport control. This small terminal needs to be at least 340 m^2.

Option 2.2 provides this close to the International Passengers terminal. Having both terminals close to each other makes the foot passengers access from outside the port and into the terminals easier as a drop off and parking area is provided for both terminals.

3.3 Facilities

Two customs and border control buildings are provided at the entrance of the RoRo and LoLo landside areas. Customs for inbound vehicles and trailers for RoRo will be located at the East North corner of the port landside layout. Customs for inbound container trucks and outbound of both containers and RoRo vehicles is located at the entrance to the new land reclamation area.

In the area between the RoRo linkspans and the outbound customs area, enough space is provided for vehicle waiting lanes. Cars will queue in these lanes once they get out of the vessel and wait for their turn to go through passport controls.

Between the two RoRo berths, a finger for foot passengers is provided to access the vessels; vehicle access to the vessels is via Linkspan. To avoid mixing vehicles and foot passengers a footbridge linking the finger and the International Passengers terminal is provided for foot passengers.

Within the foot passengers area, landside facilities are required to provide sufficient parking spaces and drop off areas. The required space for this area is 2,000 m^2 and is destined to foot passengers getting into the port either using taxis or hired cars and private cars. Option 2.2 provides this area between both passengers terminals as shown in Figure 1.

3.4 Access and ISPS fence

The distribution of the areas and accesses is designed to clearly and tidily separate public areas from security areas within the port.

The ISPS line starts at the south of the facilities, separating the LoLo and Inter-island freight facilities, continuing towards the North through the customs building and going around the RoRo landside facilities, separating the access road for passengers and the RoRo landside area. All international LoLo and RoRo operations and storage area will remain inside the restricted area. The International drop off and parking area for passengers will be outside the security area. The Inter-island passenger terminal remains outside the restricted area, while the ISPS line splits the International passengers' terminal in two halves, one for passengers that arrive to the terminal and the other for passengers who have passed the relevant passport controls. The ISPS line separates the International and Inter-island quay areas.

The layout of Option 2.2 presented in Figure 1 identifies the access lanes and the ISPS line as the thick black line separating international and inter-island activities.

The following subsections describe the accesses provisions Option 2.2 considers for the different sectors.

3.4.1 LoLo

LoLo freight vehicles access the Port along the north side of the South Quay road access using the north eastern entrance. The vehicles access the LoLo landside area by driving to the south, going through the customs area and into the LoLo landside. LoLo traffic exits the Port along the south aide of St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.2 RoRo freight

RoRo freight vehicles access the Port along the north side of the South Quay road access. The vehicles access the RoRo landside area by driving round the northern perimeter of the new port facilities. To get out of the port, one lane is provided to queue before the outbound customs and border control. RoRo traffic exits the Port along the south aide of St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.3 Private cars

Private cars access the Port along the north side of the South Quay road access. The vehicles access the car marshalling area by driving round the northern perimeter of the new port facilities, where two lanes are provided only for private cars. To get out of the port, ten lanes are provided to queue before the outbound customs and border control. Cars exit the Port along the south aide of St Julian's Pier access road, prior to enter the Weighbridge Roundabout.

3.4.4 International passengers

International passengers access the Port along the north side of the South Quay road access. Taxis and private cars driving into the drop off area access the area by driving round the northern perimeter of the new port facilities. International passengers do not need to go through customs or border control areas as vehicles do. These controls are provided inside the international passengers terminal.

3.4.5 Inter-island freight

Inter-island freight accesses remain as they currently are.

3.4.6 Inter-island passengers

Inter-island passengers access the Port along the north side of the South Quay road access. Taxis and private cars driving into the drop off area access the port using the same lanes as the international passengers.

Inter-island passengers do not need to go through customs or border control areas, they go straight into the inter-island passengers terminal and onto the ships.

3.5 Freed space

By relocating commercial activities from St Peter Port harbour to the new harbour East of QEII, some existing space in St. Peter Port harbour will become free. This space is approximately 20,000 m^2 and could potentially be repurposed.

The proposed area of land reclamation, with 86,600 m^2, provides enough room to comfortably accommodate the landside facilities of all commercial activities. Of this area approximately 23,500 m^2 will probably be unused for the landside space required for the commercial activities within the port. This unused area has been left unfilled in the cost estimate in order to try to reduce the initial investment needed.

4. Spatial and location requirements

Table 1 shows a checklist of the facilities and landside areas distribution proposed for Option 2.2 which analyses if the spatial and location requirements identified in the Spatial requirements study are met.

	Spatial requirements identified	Option 2.2
LoLo		
Berth	1 no. 120 m long berth with a depth of 6.4 m	✓
Landside space	8,700 m^2 should be provided for 87 Twenty-feet Ground Slots	✓
Facilities	Two mobile cranes should be provided Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint. Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the container storage area and to the local road network	✓
Location requirements	The LoLo berth and yard should be located within the ISPS area of the port	✓
RoRo		
Berth	2 No. 155 m long berths with a depth of 6.6 m	✓
Landside space	8,400 m^2 should be provided for 120 trailer spaces 5,975 m^2 should be provided for private and small commercial vehicles 576 m^2 should be provided for car imports and exports	✓
Facilities	RoRo storage yard and private and small commercial vehicles- Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided No specific facilities required for car imports and exports	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the trailer storage area and to the local road network Landside access is required to the marshalling yard and from the Border Control / Customs building for cars and small commercial vehicles. The landside access	✓

	Spatial requirements identified	Option 2.2
	route should be outside the ISPS Zone. The Border Control / Customs Building should be located on the edge of the ISPS Zone such that the ISPS Zone effectively runs through the point when vehicles have been cleared The area for storing imported and exported cars needs to be located in close proximity to the RoRo ramps and within the ISPS Zone	
Location requirements	The RoRo storage yard should be located within the ISPS area of the port and in close proximity to the RoRo berths The car and small commercial vehicle facility need to be at the same location as the foot passenger facility as the vehicles and foot passengers arrive on the same vessels Landside access is required to and from the car storage area	✓
International passengers and vehicular traffic		
Berth	2 No. 155 m long berths with a depth of 6.6 m (RoRo freight) 1 No. 50 m long berth with a -3.3 mCD depth	✓
Landside space	2600 m^2 should be provided for the passenger terminal 2000 m^2 should be provided for parking spaces and drop off areas	✓
Facilities	Passenger areas should include welfare facilities, retail areas and a café/restaurant area(s)	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint. Navigation channels and turning circles shall comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the passenger terminal for buses, taxis, private cars and foot passengers. The landside access route should not enter the ISPS port security area The departure area of the terminal needs to be within the ISPS zone and the public area needs to be outside the ISPS Zone. Therefore, the terminal needs to be as close to the boundary of the ISPS Zone as possible	✓
Location requirements	The terminal for day passengers should be located within walking distance of St Peter Port Harbour commercial area. For other passengers being located close to St Peter Port Harbour commercial area is not critical	✓
Inter-island passengers		
Berth	1 No. 80 m long berth with -3.4 mCD depth	✓
Landside space	Based on the assumption of 2 people standing per square metre, which leaves enough room between passengers for luggage and personal space, the required area is approximately 340 m^2, assuming all vessels are leaving at similar times and are fully booked	✓
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	All tide access is required for inter-island charter vessels which have a maximum draught of 2.1 m	✓

	Spatial requirements identified	Option 2.2
	Landside access is required to the berth for foot passengers with adequate day parking nearby, the landside access route should not enter the ISPS Zone	
Location requirements	Inter-island passenger services need to be located in St Peter Port in close proximity to the town centre	✓
Inter-island freight		
Berth	1 No. 40 m long berth with a depth of 4 m	✓[1]
Landside space	400 m^2 should be provided for storage	✓
Facilities	Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	All tide access where possible or as a minimum, sufficient depth at MLWS is required for inter-island freight vessels which currently have a maximum draught of 3.05m Landside access must be provided for vehicles, including mobile cranes and container lorries	✓
Location requirements	There are no specific location requirements for inter-island freight	✓

Table 1: Comparison of Option 2.2, new harbour East of QEII, with spatial requirements

[1] As no new berth is provided, it is understood that there is no need of having all tide access as with the current constraints the inter-island freight traffic works.

5. Assumptions

- Considering all commercial activities going out of the port, the leisure activities could be moved around according to the sector's necessities. This is developed in Options 5.1,5.2 and 5.3

- Additionally, the berths provided in the new harbour, if available, could be potentially used for cruise mooring if the depth allows for it

- The land reclamation proposed might not be used entirely, therefore once a final design of the distribution of the landside areas accounting for traffic routes and other operations, the remaining landside area can be left unfilled and potentially used for inert waste material

- If Option 2.2 is selected for further development, a navigation simulation model would be necessary to ensure that there are no manoeuvring constraints at the berths

6. Costs

The implementation cost is between **£217** and **£360** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

In the cost estimate, the unused area of the land reclamation has been considered as unfilled, allowing to save approximately £11 million in land reclamation filling material.

Guernsey Future Harbour Requirements

Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				04/08/2020	B2382200
			Estimated By:	IV	
Sheet Title:			Jacobs		
2.2 Option Cost Estimate Summary			Status of Design:		
			Concept/Planning		

Item	Quantity	Units	Unit Cost	Subtotals	Total Cost
Preliminaries					£ 33,874,900.00
General Conditions and Mod/Demob	20%	-	-	£ 33,874,900.00	
Breakwater East					£ 20,306,400.00
Armour Units (CoreLoc/Xbloc)	57,233	Cu.m	£ 158.00	£ 9,042,900.00	
Underlayer	34,340	Cu.m	£ 72.00	£ 2,472,500.00	
Core Rock	137,360	Cu.m	£ 64.00	£ 8,791,000.00	
Breakwater South					£ 25,115,700.00
Armour Units (CoreLoc/Xbloc)	70,788	Cu.m	£ 158.00	£ 11,184,500.00	
Underlayer	42,473	Cu.m	£ 72.00	£ 3,058,100.00	
Core Rock	169,892	Cu.m	£ 64.00	£ 10,873,100.00	
Revetment (Exposed)					£ 9,701,900.00
Armour Units (CoreLoc/Xbloc)	27,345	Cu.m	£ 158.00	£ 4,320,500.00	
Underlayer	16,407	Cu.m	£ 72.00	£ 1,181,300.00	
Core Rock	65,627	Cu.m	£ 64.00	£ 4,200,100.00	
Revetment (Sheltered)					£ 5,294,200.00
Rock Armor	19,550	Cu.m	£ 74.00	£ 1,446,700.00	
Underlayer	11,730	Cu.m	£ 72.00	£ 844,600.00	
Core Rock	46,920	Cu.m	£ 64.00	£ 3,002,900.00	
Revetment Lo-Lo quay (South side)					£ 159,200.00
Rock Armor	588	Cu.m	£ 74.00	£ 43,500.00	
Underlayer	353	Cu.m	£ 72.00	£ 25,400.00	
Core Rock	1,411	Cu.m	£ 64.00	£ 90,300.00	
Slope Unfilled Area (with land reclamation material)					£ 344,000.00
Underlayer material	4,778	EA	£ 72.00	£ 344,000.00	
Dredging					£ 21,642,200.00
Dredging (Rock) inc disposal	163,956	Cu.m	£ 132.00	£ 21,642,200.00	
Quay					£ 15,067,500.00
Blockwork Quay Wall	350	Lin m	£ 41,000.00	£ 14,350,000.00	
Quay Furniture	1	EA	£ 717,500.00	£ 717,500.00	
Port Facilities					£ 11,300,000.00
Ro-Ro Linkspan	2	EA	£ 3,500,000.00	£ 7,000,000.00	
Linkspan removal	1	EA	£ 300,000.00	£ 300,000.00	
Finger Jetty	100	Lin m	£ 40,000.00	£ 4,000,000.00	
Reclamation					£ 41,155,300.00
Supply and fill material	568,051	EA	£ 69.00	£ 39,195,500.00	
Ground Improvement	1	EA	£ 1,959,775.00	£ 1,959,800.00	
Pavement					£ 5,924,100.00
Concrete pavement	53,855	EA	£ 110.00	£ 5,924,100.00	
Buildings					£ 13,364,130.00
Customs/offices	4,670	Sq.m	£ 1,192.00	£ 5,566,640.00	
Passengers terminal International	2,125	Sq.m	£ 2,516.00	£ 5,346,500.00	
Passengers terminal Inter Island	850	Sq.m	£ 2,516.00	£ 2,138,600.00	
Building dismantling	2,670	Sq.m	£ 117.00	£ 312,390.00	
				Infrastructure Subtotal	**£ 203,000,000.00**
Planning, Design, Permits, and Construction Support				7%	£ 14,210,000.00
Infrastructure Construction Total					**£ 217,000,000.00**
Optimism Bias				66%	**£ 143,000,000.00**
				Total Project Cost	**£ 360,000,000.00**

*Percentages used for Contingency, Design and Permits only consider infrastructure cost and excludes cost of equipment.

Future Harbour Requirements Study 2020

Option 3.1 - Technical Note

B2382200-JAC-02-XX-TN-C-0007 | P03

08 October 2020

States of Guernsey

-

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	21/08/20	Draft	IV	IL	MSS	MSS
PO2	22/09/20	Final	IV	IL	MSS	MSS
P03	08/10/20	Final	IV	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 3.1 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0007
Revision:	P03
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark Sherlock-Smith
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File Name:	Option 3.1 - technical note P03

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Contents

1. Introduction

The FHR 2020 study identifies that all commercial sectors (with the exception of bulk liquids) can be provided by a Do Minimum option. These Options are provided in Option 1.1 -1.3. As part of the requête, options outside the Harbours are also being considered. The Options Development Report identified that a new harbour facility located near St Sampson's harbour. Our Options development process identified Longue Hougue South as a suitable location for commercial activities.

The option presented in this technical note consists of relocating commercial activities currently located in St Peter Port harbour and St Sampson's harbour to an area adjacent to Longue Hougue South. The new harbour will need to suit current commercial needs and meet commercial forecast (high scenario) requirements. Note that leisure sectors are considered separately in another technical note.

The spatial requirements and demand study identified that it will be necessary to increase the land and berth space for the commercial sectors as well as to reorganise the facilities, public and secure areas, and to optimize traffic routes and security controls within St Peter Port harbour.

The key considerations used in the development of Option 3.1 are:

1. Ties in with proposed Longue Hougue South inert waste scheme.

2. Provide improved berth facilities: increased depths and lengths suitable for full tidal conditions.

3. Remove commercial activities from St Peter Port Harbour and St Sampson's harbour and free landside space within the existing harbours.

4. Maintain the LoLo berth and yard, RoRo berth and yard, departure area of the international passengers and car imports and exports area within the ISPS Zone.

2. Harbour layout

Option 3.1 considers the development of a new port facility adjoining the proposed Longue Hougue South inert waste reclamation site.

The proposed layout is as shown in Figure 1.

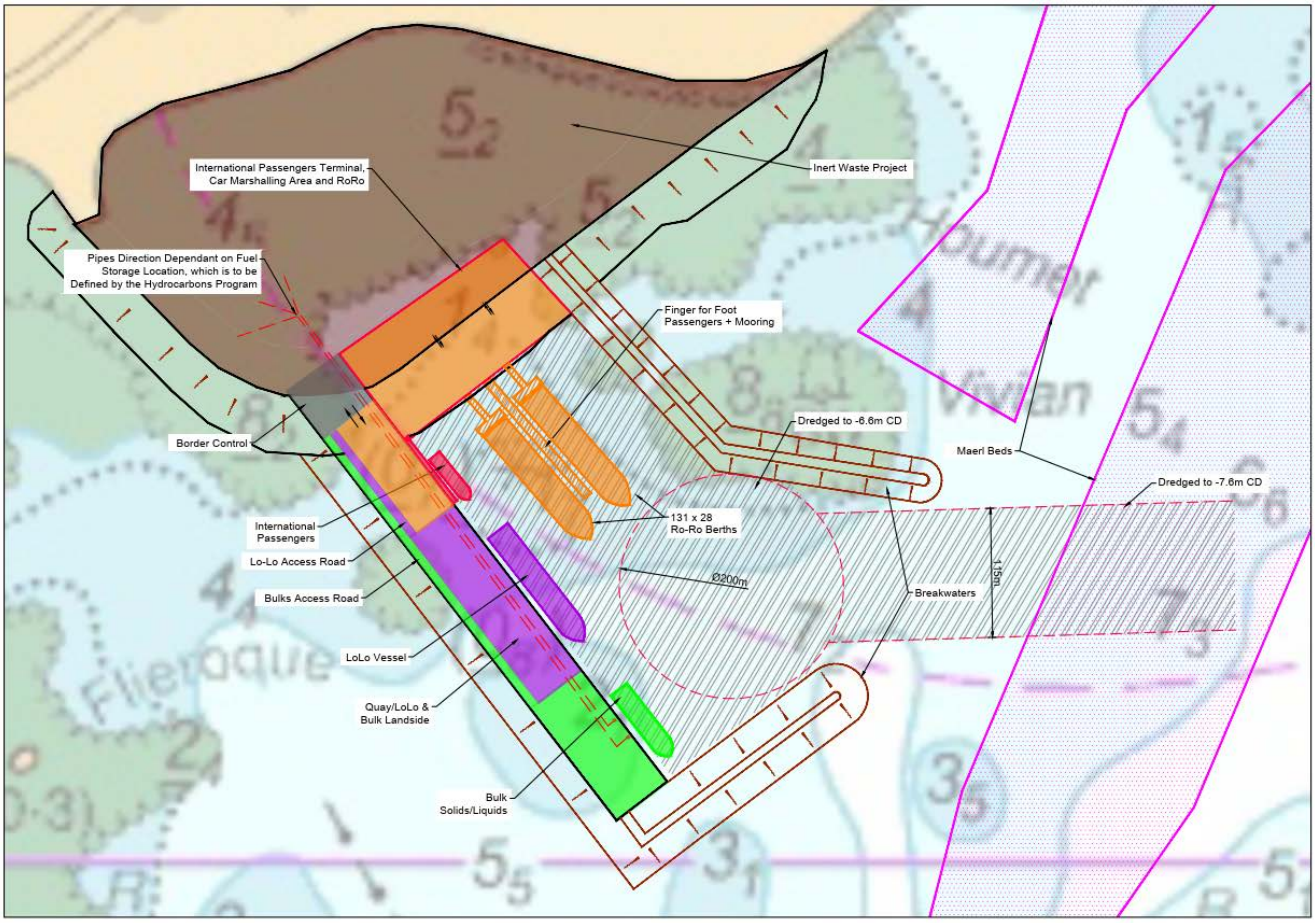

Figure 1: Layout for the new port facility – Option 3.1

Option 3.1 could benefit from the proposed inert waste site (depending on relative development timescales) and allow the movement of some or all commercial activities out of St Peter Port and St Sampson's harbour. Most commercial activities (LoLo, RoRo, bulk and international passengers) are moved from St Peter Port harbour and St Sampson's harbour.

3. Option description

Option 3.1 considers the development of a new port facility.

3.1 Berths

Rock dredging is required to provide sufficient water depth both at the berths and at the navigational channel and turning circle.

The following subsections describe the berth provisions Option 3.1 considers for the different sectors.

3.1.1 LoLo

One LoLo berth is provided at the sheltered side of the new western breakwater. A quay will be provided in this side to accommodate the cranes and equipment needed for undertaking safe, secure and productive operations.

The berth requirement for the LoLo vessels expected is -6.4 mCD and the access depth requirement is -7.4 mCD. This is achieved through dredging to provide all tide access and berthing. The length available for the LoLo berth in Option 3.1 is 150 m.

3.1.2 RoRo

Two RoRo berths are provided. The vessels will connect to the land with linkspans for the vehicles access and a finger between the ships to provide access for foot passengers. The berth requirement for the RoRo vessels expected is -6.6 mCD and the access depth requirement is -7.6 mCD. This is achieved through dredging to provide providing all tide access and berthing.

The distance between berths has been considered according to recommendations in the Port's Designer Handbook (Thoresen,2014). These state that the distance between the berths should be at least two times the beam of the widest vessel plus 30 meters. The biggest vessel (RoRo) has a beam of 28 meters, so the distance between berths should be at least 86 meters.

3.1.3 Bulk solids and liquids

One berth will be provided for both bulk solids and bulk liquids along the same quay where the LoLo berth is.

The berth requirement for the bulks is -5.5 mCD and the access depth requirement is -6.5 mCD. This is achieved through dredging to provide all tide access and berthing. The length available for the bulks berth is 110 m.

3.1.4 International passengers

There are three international passenger berths. Two of them are the RoRo berths and the third is a ferry berth located in a quay provided at the West of the RoRo berths, along the same quay where the LoLo berth is.

The berth requirement for the international passenger ferries is -3.3 mCD and the access depth requirement is -4.3 mCD. This is achieved through dredging to provide all tide access and berthing. The length available for the international passenger berth is 70 m.

3.1.5 Inter-island freight and passengers

Inter-island freight and passengers is to remain in St Peter Port harbour.

3.2 Landside space

The following subsections describe the landside proposals Option 3.1 considers for the different sectors.

3.2.1 RoRo

Two RoRo berths will be provided. Access to vessels for vehicles will be thorough the linkspans whilst foot passengers will use the finger. The landside space provided includes the international passenger terminal (which is shared with the dedicated international passenger ferry), space for parking and drop off, car marshalling area, unaccompanied vehicles storage area and room for accesses and customs and border control where required.

3.2.2 Unitised cargo

The LoLo dedicated berth will be located at the inner part of the western breakwater. The landside area is provided with land reclamation.

3.2.3 Bulk solids and liquids

The Bulks berth will be located at the inner part of the southern breakwater. The landside area is provided with land reclamation. Facilities for load/unload operations of both bulk solids (hoppers) and bulk liquids (manifold/pipe to storage areas) would be provided.

3.2.4 International passengers

The international passenger terminal will be shared with the RoRo berths (see Section 3.2.1)

3.2.5 Inter-island freight, inter-island passengers, cruise and other leisure sectors

Inter-island freight, inter-island passengers, cruise and other leisure sectors remain at St Peter Port.

3.3 Facilities

Reclamation, new quays, quay furniture, rock revetments, buildings, road accesses are provided.

New manifolds and pipelines to storage for hydrocarbons. The pipes routing design depends on the output of the Hydrocarbons Program regarding the location of the fuel storage facilities.

3.4 Access and ISPS fence

Controlled accesses will be required for all facilities. As Option 3.1 includes all international activities, excluding any local or Inter-island activities, the access to the areas will be restricted.

This means that the ISPS delimitation line will be the perimeter of all facilities provided in Option 3.1. Customs and border control will be provided both at the entrance and exit of the port facilities.

Access to bulks landside is provided at the back of the quay.

3.5 Inert waste project

To get the harbour shape, breakwaters orientation and minimise the dredging, certain features in the bathymetry (shallower and deeper small areas) needed to be considered for reducing the size, as not only from an economic point of view but also environmental, the costs would be lower.

Although Option 3.1 was at first considered to a further development of the inert waste site, when trying to accommodate all the international commercial activities in the harbour, the outlined inert waste site had to be slightly reduced.

This was because, if the site was maintained as suggested, the breakwaters would be in much deeper water and significant dredging would be required.

4. Location and spatial requirements

Table 1 provides a comparison of the spatial requirements identified and Option 3.1.

	Spatial requirements identified	Option 3.1
LoLo		
Berth	1 no. 120 m long berth with a depth of 6.4 m	✓*
Landside space	8,700 m^2 should be provided for Twenty-feet Ground Slots	✓
Facilities	Two mobile cranes should be provided Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint. Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the container storage area and to the local road network	✓
Location requirements	The LoLo berth and yard should be located within the ISPS area of the port	✓
RoRo		
Berth	2 No. 155 m long berths with a depth of 6.6 m	✓*
Landside space	8,400 m^2 should be provided for 110 trailer spaces 5,975 m^2 should be provided for private and small commercial vehicles 576 m^2 should be provided for car imports and exports	✓
Facilities	RoRo storage yard and private and small commercial vehicles: Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided No specific facilities required for car imports and exports	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the trailer storage area and to the local road network Landside access is required to the marshalling yard and from the Border Control / Customs building for cars and small commercial vehicles. The landside access	✓

	Spatial requirements identified	Option 3.1
	route should be outside the ISPS Zone. The Border Control / Customs Building should be located on the edge of the ISPS Zone such that the ISPS Zone effectively runs through the point when vehicles have been cleared The area for storing imported and exported cars needs to be located in close proximity to the RoRo ramps and within the ISPS Zone	
Location requirements	The RoRo storage yard should be located within the ISPS area of the port and in close proximity to the RoRo berths The car and small commercial vehicle facility need to be at the same location as the foot passenger facility as the vehicles and foot passengers arrive on the same vessels Landside access is required to and from the car storage area	✓
International passengers and vehicular traffic		
Berth	2 No. 155 m long berths with a depth of 6.6 m (RoRo freight) 1 No. 50 m long berth with a -3.3 mCD depth	✓*
Landside space	2,600 m^2 should be provided for the passenger terminal 2,000 m^2 should be provided for parking spaces and drop off areas	✓
Facilities	Passenger areas should include welfare facilities, retail areas and a café/restaurant area(s)	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint. Navigation channels and turning circles shall comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the passenger terminal for buses, taxis, private cars and foot passengers. The landside access route should not enter the ISPS port security area The departure area of the terminal needs to be within the ISPS zone and the public area needs to be outside the ISPS Zone. Therefore, the terminal needs to be as close to the boundary of the ISPS Zone as possible	✓
Location requirements	The terminal for day passengers should be located within walking distance of St Peter Port Harbour commercial area. For other passengers being located close to St Peter Port Harbour commercial area is not critical	✓
Bulk solids		
Berth	1 No. 110 m long berths with a depth of 5.5 m	✓*
Landside space	2,000 m^2 should be provided for load/unload/storage operations	✓
Facilities	Cranes for unload/load. Utilities: potable water, fire water, lighting, quayside power for vessels. Equipment: bollards, fenders, ladders, safety ropes, lifesaving equipment	✓
Access and ISPS	Bulk solid berths must be located in an ISPS restriction zone. Vessel and lorry access must be available in order to transfer the cargoes. Silos for cement storage must be located in close proximity to the cement berth to allow self-discharge of the vessel	✓

	Spatial requirements identified	Option 3.1
Location requirements	Possibility to cope with increase in road traffic between the new facilities and the existent storage areas	✓
Bulk liquids	**Spatial Requirements to be determined by Hydrocarbons Supply Programme**	

Table 1: Comparison of Option 3.1 with spatial requirements

5. Assumptions

- Option 3.1 assumes that the land reclamation provided in the area that will serve as basis of the extension of land areas for the construction of the new port. This land reclamation material will come from the Inert Waste project and will be used to fill in the areas as shown in Figure 1.

- If Option 3.1 is selected for further development, a navigation simulation model would be necessary to ensure that there are no manoeuvring constraints at the berths.

6. Costs

The implementation cost is between **£164** and £**272** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

Guernsey Future Harbour Requirements 2020					
Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				06/08/2020	B2382200
			Estimated By:		IV
Sheet Title:			Jacobs		
3.1 Option Cost Estimate Summary			Status of Design:		
			Concept/Planning		
Item	**Quantity**	**Units**	**Unit Cost**	**Subtotals**	**Total Cost**
Preliminaries					£ 25,487,300.00
General Conditions and Mod/Demob	20%	-	-	£ 25,487,300.00	
Breakwater North					£ 8,434,300.00
Armour Units (CoreLoc/Xbloc)	22,303	Cu.m	£ 158.00	£ 3,523,900.00	
Underlayer	13,939	Cu.m	£ 72.00	£ 1,003,600.00	
Core Rock	55,758	Cu.m	£ 64.00	£ 3,568,500.00	
Crown wall	929	Cu.m	£ 364.00	£ 338,300.00	
Breakwater South					£ 26,244,800.00
Armour Units (CoreLoc/Xbloc)	69,400	Cu.m	£ 158.00	£ 10,965,200.00	
Underlayer	43,375	Cu.m	£ 72.00	£ 3,123,000.00	
Core Rock	173,500	Cu.m	£ 64.00	£ 11,104,000.00	
Crown wall	2,892	Cu.m	£ 364.00	£ 1,052,600.00	
Dredging					£ 42,068,400.00
Dredging (Rock) inc disposal	318,700	Cu.m	£ 132.00	£ 42,068,400.00	
Quay					£ 24,581,600.00
Blockwork Quay Wall	571	Lin m	£ 41,000.00	£ 23,411,000.00	
Quay Furniture	1	EA	£ 1,170,550.00	£ 1,170,600.00	
Port Facilities					£ 11,000,000.00
Ro-Ro Linkspan	2	EA	£ 3,500,000.00	£ 7,000,000.00	
Finger Jetty	100	Lin m	£ 40,000.00	£ 4,000,000.00	
Pavement					£ 7,850,700.00
Concrete pavement	71,370	EA	£ 110.00	£ 7,850,700.00	
Buildings					£ 7,256,800.00
Customs/offices	600	Sq.m	£ 1,192.00	£ 715,200.00	
Passengers terminal International	2,600	Sq.m	£ 2,516.00	£ 6,541,600.00	
				Infrastructure Subtotal	**£ 153,000,000.00**
Planning, Design, Permits, and Construction Support				7%	£ 10,710,000.00
Infrastructure Construction Total					**£ 164,000,000.00**
Optimism Bias				66%	**£ 108,000,000.00**
				Total Project Cost	**£ 272,000,000.00**
*Percentages used for Contingency, Design and Permits only consider infrastructure cost and excludes cost of equipment.					

Future Harbour Requirements Study 2020

Option 3.2 - Technical Note

B2382200-JAC-02-XX-TN-C-0008 | P03

08 October 2020

States of Guernsey

-

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	27/08/20	ISSUE	IV	CH	MSS	MSS
P02	22/09/20	FINAL	IV	CH	MSS	MSS
P03	08/10/20	Final	IV	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 3.2 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0008
Revision:	P03
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark Sherlock-Smith
Author:	Isabel Vidal
File Name:	Option 3.2 - technical note P03

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Contents

1. Introduction

The FHR 2020 study identifies that all commercial sectors (with the exception of bulk liquids) can be provided by a Do Minimum option. These options are provided in Option 1.1 -1.3. As part of the requête, options outside the Harbours are also being considered. The Options Development Report identified that a new harbour facility located near St Sampson's harbour. Our options development process identified Longue Hougue South as a suitable location for commercial activities.

The option presented in this technical note consists of relocating some commercial activities currently located in St Peter Port harbour and St Sampson harbour into an area adjacent to Longue Hougue South. The new harbour will need to suit current commercial needs and meet commercial forecast (high scenario) requirements. Note that leisure sectors are considered separately in another technical note.

The spatial requirements and demand study identified that it will be necessary to increase the land and berth space for the commercial sectors as well as to reorganise the facilities, public and secure areas, and to optimize traffic routes and security controls within St Peter Port harbour.

The key considerations used in the development of Option 3.2 are:

1. Ties in with proposed Longue Hougue South inert waste scheme.

2. Provide improved berth facilities: increased depths and lengths suitable for full tidal conditions.

3. Removes LoLo from St Peter Port harbour and Bulk Solids and Liquids from St Sampson's harbour and free landside space within the existing harbours.

2. Harbour layout

This option considers the development of a new port facility adjoining the proposed Longue Hougue South inert waste reclamation site.

The proposed layout is as shown in Figure 1.

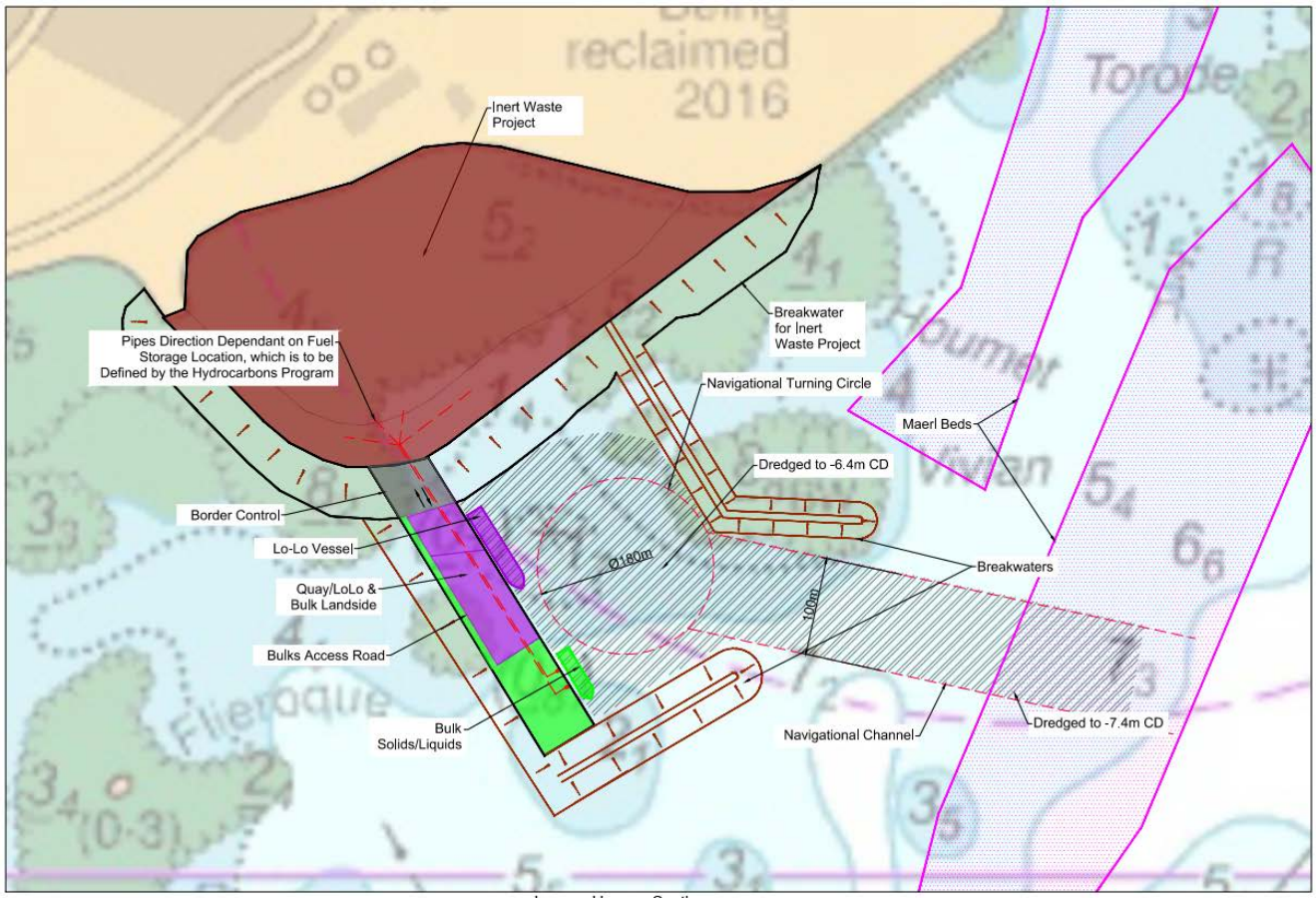

Figure 1: Layout for the new port facility – Option 3.2

This option could benefit from the proposed inert waste site (depending on relative development timescales) and allow the movement of some or all commercial activities out of St Peter Port and St Sampson's harbour. Only a limited set of sectors (LoLo and Bulk only) are moved from St Peter Port harbour and St Sampson's harbour.

3. Option description

This option considers the development of a new port facility.

3.1 Berths

The following subsections describe the berths provisions Option 3.2 considers for the different sectors.

3.1.1 LoLo

One LoLo berth is provided at the sheltered side of the new western breakwater. A quay will be provided in this side to accommodate the cranes and equipment needed for undertaking safe, secure and productive operations.

The berth requirement for the LoLo vessels expected is -6.4 mCD and the access depth requirement is -7.4 mCD. This is achieved through dredging to provide all tide access and berthing. The length available for the LoLo berth in Option 3.2 is 150 m.

3.1.2 Bulk solids and liquids

One berth will be provided for both bulk solids and bulk liquids along the same quay where the LoLo berth is.

The berth requirement for the bulks is -5.5 mCD and the access depth requirement is -6.5 mCD. This is achieved through dredging to provide all tide access and berthing. The length available for the bulks berth is 110 m.

3.2 Landside space

The following subsections describe the landside proposals this option considers for the different sectors.

3.2.1 Unitised cargo

The LoLo dedicated berth will be located at the inner part of the western breakwater. The landside area is provided with land reclamation.

3.2.2 Bulk solids and liquids

The Bulks berth will be located at the inner part of the southern breakwater. The landside area is provided with land reclamation. Facilities for load/unload operations of both bulk solids (hoppers) and bulk liquids (manifold/pipe to storage areas) would be provided.

3.3 Facilities

New quays, quay furniture, rock revetments, buildings, road accesses are provided.

New manifolds and pipelines to storage for hydrocarbons. The pipes routing design depends on the output of the Hydrocarbons Program regarding the location of the fuel storage facilities.

3.4 Access and ISPS fence

Controlled accesses will be required for all facilities. As this option includes only international activities, excluding any local or Inter-island activities, the access to the areas will be restricted.

This means that the ISPS delimitation line will be the perimeter of all facilities provided in this option. Customs and border control will be provided both at the entrance and exit of the port facilities.

Access to bulks landside is provided at the back of the quay.

3.5 Inert Waste project

Option 3.2 does include the entire site for the inert waste project. In this case it is possible because the size of the harbour is not required to be as extent as in Option 3.1, as it only includes LoLo and bulks.

Therefore, spaces in deeper and shallower areas of the bathymetry have been easily used to get an optimised size of the harbour adjoining the currently proposed inert waste project.

4. Location and spatial requirements

Table 1 provides a comparison of the spatial requirements identified and Option 3.2.

	Spatial requirements identified	Option 3.2
LoLo		
Berth	1 no. 120 m long berth with a depth of 6.4 m	✓*
Landside space	8,700 m^2 should be provided for Twenty-feet Ground Slots	✓
Facilities	Two mobile cranes should be provided Utilities: Potable water, fire water and area lighting should be provided Safety equipment: Bollards and fenders should be provided Safety equipment: Ladders, safety ropes and chains and lifesaving equipment should be provided	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing, or preferably no tide constraint. Navigation channels and turning circles should comply with best practice for width and depth e.g. PIANC WG121 Report Landside access is required to the container storage area and to the local road network	✓
Location requirements	The LoLo berth and yard should be located within the ISPS area of the port	✓
Bulk solids		
Berth	1 No. 110 m long berths with a depth of 5.5 m	✓*
Landside space	2000 m^2 should be provided for load/unload/storage operations	✓
Facilities	Cranes for unload/load. Utilities: potable water, fire water, lighting, quayside power for vessels. Equipment: bollards, fenders, ladders, safety ropes, lifesaving equipment	✓
Access and ISPS	Bulk solid berths must be located in an ISPS restriction zone. Vessel and lorry access must be available in order to transfer the cargoes. Silos for cement storage must be located in close proximity to the cement berth to allow self-discharge of the vessel	✓
Location requirements	Possibility to cope with increase in road traffic between the new facilities and the existent storage areas	✓
Bulk liquids	**Spatial Requirements to be determined by Hydrocarbons Supply Programme**	

Table 1: Comparison of Option 3.2 with spatial requirements.

5. Assumptions

- If Option 3.2 is selected for further development, a navigation simulation model would be necessary to ensure that there are no manoeuvring constraints at the berths.

6. Costs

The implementation cost is between **£121** and £**201** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

Guernsey Future Harbour Requirements 2020					Jacobs
Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				06/08/2020	B2382200
			Estimated By:		IV
Sheet Title:			Jacobs		
3.2 Option Cost Estimate Summary			Status of Design:		
			Concept/Planning		
Item	**Quantity**	**Units**	**Unit Cost**	**Subtotals**	**Total Cost**
Preliminaries					£ 18,761,300.00
General Conditions and Mod/Demob	20%	-	-	£ 18,761,300.00	
Breakwater North					£ 5,614,200.00
Armour Units (CoreLoc/Xbloc)	14,846	Cu.m	£ 158.00	£ 2,345,600.00	
Underlayer	9,279	Cu.m	£ 72.00	£ 668,100.00	
Core Rock	37,115	Cu.m	£ 64.00	£ 2,375,300.00	
Crown wall	619	Cu.m	£ 364.00	£ 225,200.00	
Breakwater South					£ 24,112,800.00
Armour Units (CoreLoc/Xbloc)	63,762	Cu.m	£ 158.00	£ 10,074,400.00	
Underlayer	39,851	Cu.m	£ 72.00	£ 2,869,300.00	
Core Rock	159,406	Cu.m	£ 64.00	£ 10,202,000.00	
Crown wall	2,657	Cu.m	£ 364.00	£ 967,100.00	
Dredging					£ 39,600,000.00
Dredging (Rock) inc disposal	300,000	Cu.m	£ 132.00	£ 39,600,000.00	
Quay					£ 11,623,500.00
Blockwork Quay Wall	270	Lin m	£ 41,000.00	£ 11,070,000.00	
Quay Furniture	1	EA	£ 553,500.00	£ 553,500.00	
Reclamation					£ 11,029,800.00
Supply and fill material	152,241	EA	£ 69.00	£ 10,504,600.00	
Ground Improvement	1	EA	£ 525,230.00	£ 525,200.00	
Pavement					£ 1,111,000.00
Concrete pavement	10,100	EA	£ 110.00	£ 1,111,000.00	
Buildings					£ 715,200.00
Customs/offices	600	Sq.m	£ 1,192.00	£ 715,200.00	
				Infrastructure Subtotal	**£ 113,000,000.00**
Planning, Design, Permits, and Construction Support				7%	£ 7,910,000.00
Infrastructure Construction Total					**£ 121,000,000.00**
Optimism Bias				66%	**£ 80,000,000.00**
				Total Project Cost	**£ 201,000,000.00**
*Percentages used for Contingency, Design and Permits only consider infrastructure cost and excludes cost of equipment.					

Future Harbour Requirements Study 2020

Option 4.1 - Technical Note

B2382200-JAC-02-XX-TN-C-0009 | P02

08 October 2020

States of Guernsey

-

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	28/08/20	ISSUE	IV	HB	MSS	MSS
P02	08/10/20	Final	IV	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 4.1 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0009
Revision:	P02
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark SherlockSmith
Author:	Isabel Vidal
File Name:	Option 4.1 - technical note P02

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Contents

1. Introduction

This option considers the provision of a dedicated cruise berth outside the harbour, located to the East of QEII Marina, selected as one of the shortlisted options in the evaluation process.

Currently there is no dedicated berth for cruise vessels in Guernsey, with cruise ships anchoring outside the St Peter Port harbour. Passengers are transferred from cruise ships to the harbour using tenders, which land at a dedicated tender berth located between Victoria Marina and Albert Marina. The spatial requirements and demand study identified that cruise passengers are important to the tourist industry within St Peter Port and therefore a dedicated cruise berth has been considered as part of the options appraisal.

The spatial requirements and demand study also identified that it will be necessary to increase the land and berth space for the commercial sectors as well as to reorganise the facilities, public and secure areas, and to optimise traffic routes and security controls within St Peter Port harbour. These layout options are considered in separate technical notes.

2. Harbour layout

The options short-listing process revealed that the most suitable solution for a new dedicated cruise berth required the construction of a breakwater, land reclamation and dredging. The length of the berth needs to be at least 375 m as defined in the spatial requirements study.

This dedicated cruise berth option considers the construction of a breakwater to protect the berth, and an extension of the southern breakwater. The alignment of the breakwater has been defined using the existing bathymetry to optimise the dredging and breakwater volumes. A land reclamation with quay space for the cruise vessel is provided at the western part of the new proposed harbour. This layout would require significant dredging, not only at the berth, but also at the entrance and within the navigation channel approaching the berth.

The proposed layout for Option 4.1 is as shown in Figure 1 in this document.

The harbour dimensions need to be such that the biggest vessel expected (350 m) has enough space to manoeuvre through the harbour entrance and to/from the berth, considering the manoeuvrability of the ship. For this layout we have estimated the space required, based on expert judgement. However, if this option is further developed a navigation simulation would be required in order to ensure that the design of the entrance, the manoeuvring area and navigation channel comply with the navigation requirements.

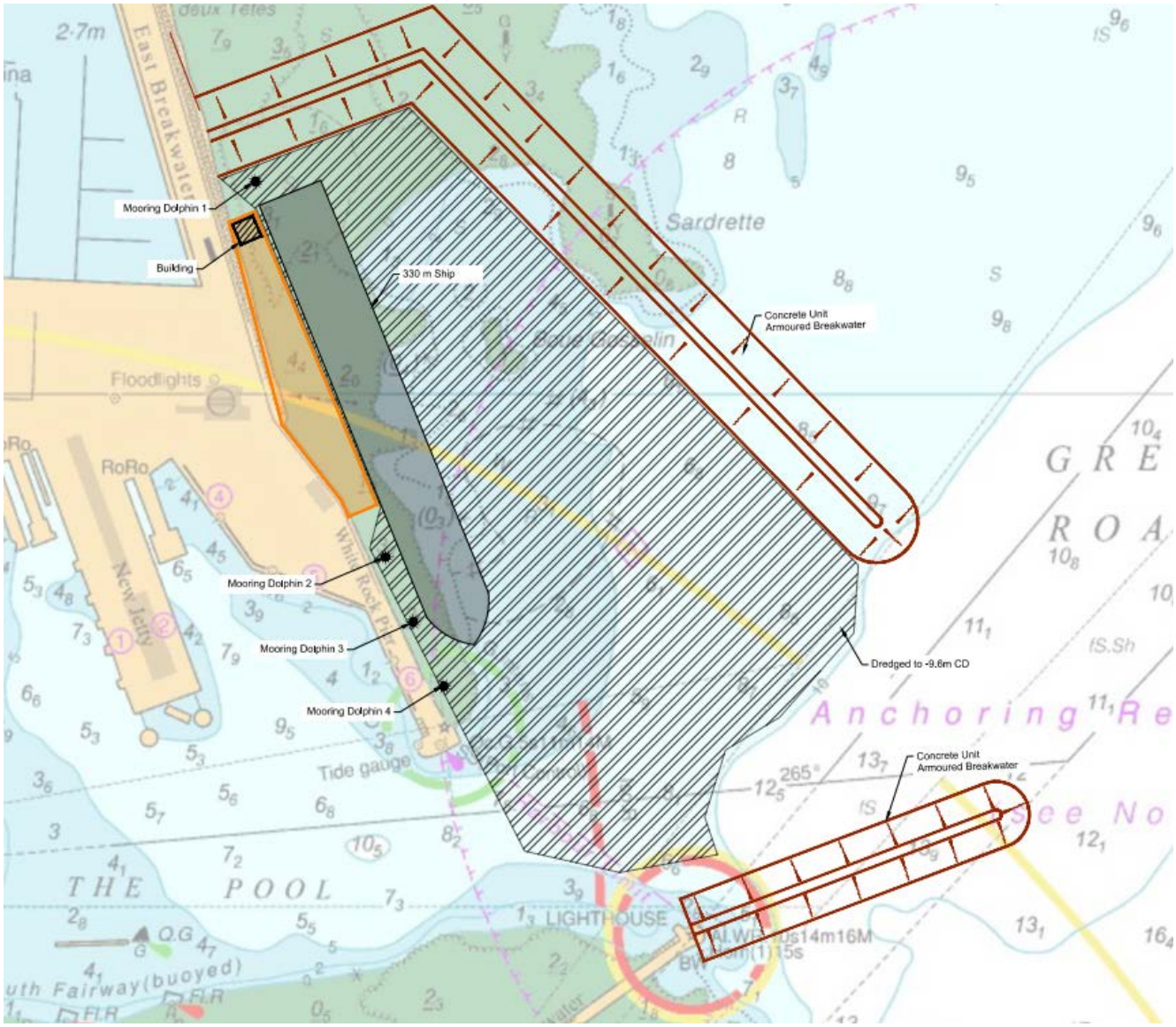

Figure 1: Proposed layout for Option 4.1[1]

[1] This is a draft for Option 4.1 subject to further modifications

3. Option description

The following subsections describe the arrangements considered for the cruise berth, landside space and facilities.

3.1 Cruise berth

The berth is provided by a quay alongside a small area of reclaimed land. The quay does not run the full length of the biggest vessels, providing 220 m which is enough berth length to enable passengers to embark and disembark. Four mooring dolphins distributed at both sides of the quay and four breasting dolphins along the quay will extend the berth length to the 375m required allowing safe mooring and berthing. In order to meet the requirements for accessing the berth, in terms of navigational and tidal constraints, the depth of the berth needs to be -9.6 mCD. The available depth at the berth varies from 5mCD to -1mCD, meaning that significant dredging will be needed to accommodate the vessels. Additional dredging will be required at the navigation channel and vessel manoeuvring areas to provide enough depth for the vessel to get to and from the berth.

3.2 Cruise landside space

The landside space is provided by the new area of land reclamation. Cruise vessels require sufficient landside space to allow access for buses and taxis, including a turning area. Landside access is also required for waiting foot passengers. The landside space provided is approximately 6,100 m^2.

3.3 Cruise facilities

Although it would be advisable to place the cruise berth as close as possible to the town centre and shops, providing a new dedicated cruise berth inside St Peter Port harbour was ruled out in the short-listing of the options due to lack of space. This means that the location proposed for the Cruise berth in Option 4.1 will require accesses and parking spaces for buses and taxis for the cruise passengers.

Adequate parking for buses and taxis to accommodate all passengers of the largest vessel needs to be provided.

A 200 m^2 building is provided at the north part of the land reclamation to provide a sheltered area where passengers can wait to board the vessels or wait for the buses or taxis when needed. Toilets should be located here.

3.4 Access and ISPS fence

The existing access road with a new link could be used to provide vehicle access to the landside area of the cruise berth. In and out lanes need to be provided in this area with enough space for the turning circle of the buses.

The ISPS line arrangement will be dependent on the distribution of the rest of the sectors in the current available spaces (see technical notes for Options 1.1 and 1.2). Assuming that the cruise vessels have passport control systems in place before the passengers disembark the vessel, the cruise berth can be outside of the restrictive area delimited by the ISPS line. If no passport control is undertaken on the vessel, the building provided or the space at the quay area could be used to provide a temporary passport control point.

3.5 Freed space

If a dedicated cruise berth is provided, the existing berths currently used by the cruise tenders could potentially be repurposed, provided that not more than one cruise arrives to St Peter Port at the same time.

4. Location and spatial requirements

Table 1 shows a checklist of the facilities and landside areas distribution proposed for Option 4.1 which analyses if the spatial and location requirements identified in the Spatial requirements study are met.

	Spatial requirements identified	Option 4.1 Dedicated Cruise Berth Provision
Berth	The berth length must be 375m long with a depth of 9.6m	✓
Landside space	1,750m^2 of space would be required alongside the vessel for waiting passengers 3,750 m^2 additional landside access must be provided for taxis and buses	✓
Facilities	Toilets need to be located close to embarkation / disembarkation point. The area that is used for passengers to wait for tenders would benefit if it was covered or at least part covered	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint. Navigation channels and turning circles shall comply with best practice for width and depth e.g. PIANC WG121 Report Landside access must be provided for cars, taxis and potentially foot passengers	✓
Location requirements	Cruise ship passengers should be within walking distance of the town centre	✓

Table 1: Comparison of Option 4.1, dedicated cruise berth layout, with spatial requirements

5. Assumptions

It is known that sometimes more than one cruise ship arrives at St Peter Port at the same time, meaning that providing a dedicated cruise berth would only solve partially the cruise passengers space demands. It would therefore be necessary to maintain the tender berths in order to provide service to additional cruise ships if visiting at the same time or provide facilities for tender berthing in the vicinity of the new cruise terminal.

6. Costs

The implementation cost is between **£ 144** and **239** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

This cost corresponds to a berth for a 330 m vessel, which has a capacity of 4,300 PAX. If the berth was reduced to accommodate a 245 m ship (1400 PAX capacity), the reduction of dredging and breakwater volumes could lead to a reduction of the cost of approximately 15%.

Project Title

Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				04/08/2020	B2382200
			Estimated By:		IV
Sheet Title:			Jacobs		
4.1 Option Cost Estimate Summary			Status of Design:		
			Concept/Planning		

Item	Quantity	Units	Unit Cost	Subtotals	Total Cost
Preliminaries					£ 22,434,900.00
General Conditions and Mod/Demob	20%	-	-	£ 22,434,900.00	
Breakwater East					£ 20,057,000.00
Armour Units (CoreLoc/Xbloc)	53,038	Cu.m	£ 158.00	£ 8,379,900.00	
Underlayer	33,149	Cu.m	£ 72.00	£ 2,386,700.00	
Core Rock	132,594	Cu.m	£ 64.00	£ 8,486,000.00	
Crown wall	2,210	Cu.m	£ 364.00	£ 804,400.00	
Breakwater South					£ 14,617,100.00
Armour Units (CoreLoc/Xbloc)	41,198	Cu.m	£ 158.00	£ 6,509,300.00	
Underlayer	24,719	Cu.m	£ 72.00	£ 1,779,800.00	
Core Rock	98,875	Cu.m	£ 64.00	£ 6,328,000.00	
Dredging					£ 62,968,800.00
Dredging (Rock) inc disposal	477,036	Cu.m	£ 132.00	£ 62,968,800.00	
Quay					£ 10,693,600.00
Blockwork Quay Wall	220	Lin m	£ 41,000.00	£ 9,020,000.00	
Mooring dolphins	3	EA	£ 104,848.00	£ 314,500.00	
Breasting moorings	4	EA	£ 227,018.00	£ 908,100.00	
Quay Furniture	1	EA	£ 451,000.00	£ 451,000.00	
Reclamation					£ 3,016,500.00
Supply and fill material	41,636	EA	£ 69.00	£ 2,872,900.00	
Ground Improvement	1	EA	£ 143,645.00	£ 143,600.00	
Pavement					£ 583,000.00
Concrete pavement	5,300	Sq.m	£ 110.00	£ 583,000.00	
Buildings					£ 238,400.00
Small building for Cruise passengers	200	Sq.m	£ 1,192.00	£ 238,400.00	
				Infrastructure Subtotal	**£ 135,000,000.00**
Planning, Design, Permits, and Construction Support				7%	£ 9,450,000.00
Infrastructure Construction Total					**£ 144,000,000.00**
Optimism Bias				66%	**£ 95,000,000.00**
				Total Project Cost	**£ 239,000,000.00**

*Percentages used for Contingency, Design and Permits only consider infrastructure cost and excludes cost of equipment.

Future Harbour Requirements Study 2020

Option 4.2 - Technical Note

B2382200-JAC-02-XX-TN-C-0010 | P02

08 October 2020

States of Guernsey

-

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	28/08/20	ISSUE	Il	IV	MSS	MSS
P02	08/10/20	Final	Il	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 4.2 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0010
Revision:	P02
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark SherlockSmith
Author:	Inma Lastres
File Name:	Option 4.2 - technical note P02

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Contents

1. Introduction

The current operation for cruise passengers to visit Guernsey utilises tender boats to bring in passengers from where the cruise ships anchor, which is east of the entrance to St Peter Port harbour, into St Peter port harbour. Three anchorages are available but the berths are limited to two large cruise ships.

The current operations require berth space adequate for tenders for the two largest cruise ships to embark and disembark passengers at the same time. As the anchorage is limited to two large cruise ships, or three smaller cruise ships, it is not anticipated that additional space will be required, however, one additional pontoon unit would allow for three tender vessels.

This option considers the provision of an additional tender berth, as an extension of the existing ones, and the provision of a wider 50 m long access bridge.

The spatial requirements and demand study also identified that it will be necessary to provide landside access for buses, cars, taxis and foot passengers.

The spatial requirements and demand study also identified that it will be necessary to increase the land and berth space for the commercial sectors as well as to re-organise the facilities, public and secure areas, and to optimise traffic routes and security controls within St Peter Port harbour. These layout options are considered in separate technical notes.

2. Harbour layout

The options short-listing process revealed a possible Do Minimum solution for the cruise sector. This option considers the installation of an additional tender berth and a wider 50 m access bridge, as shown in Figure 1. The proposed layout would not likely require any dredging.

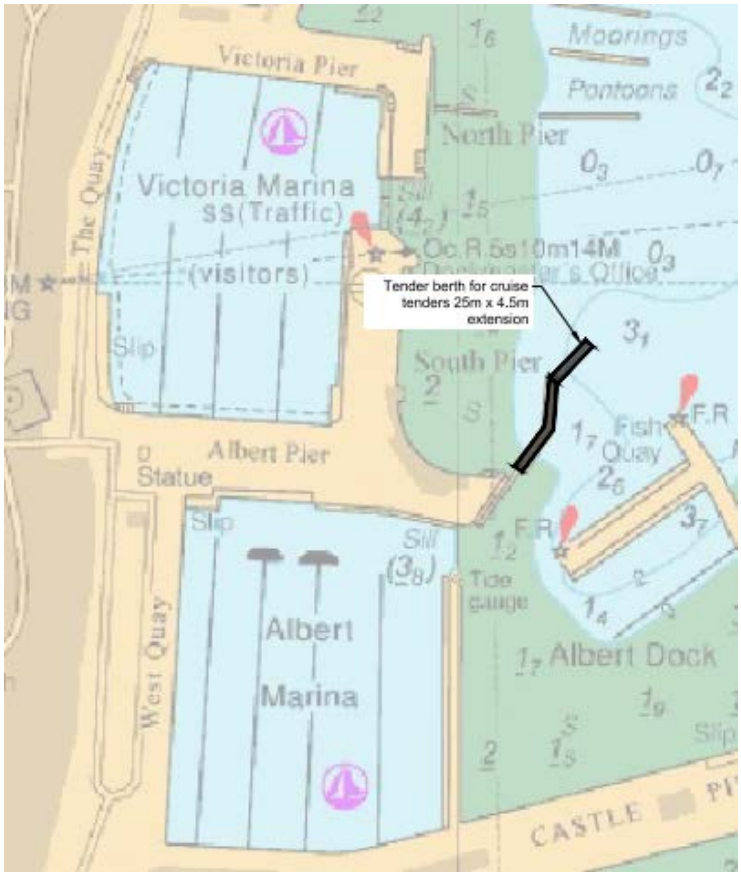

Figure 1: Layout for additional tender berth

3. Option description

A description of this option is provided in the following section, along with a comparison with the spatial requirements identified for the cruise ship tenders.

3.1 Tender berths

The existing tender berth is currently 50 m long with a depth of -1.7 mCD. The required berth to meet the requirements for the 2050 high scenario forecast is to be 75 m long and with a depth of 2.2 m. It is therefore proposed to provide an additional 25 m long tender berth as shown in Figure 1. The proposed layout will avoid the need for dredging.

3.2 Tender landside space

The cruise landside area is to remain unaltered. Sufficient landside space for buses and taxis and waiting foot passengers (500 m^2) is available to meet the 2050 high scenario forecast.

3.3 Tender facilities

Toilets need to be located close to embarkation / disembarkation point.

3.4 Access and ISPS fence

Cruise passengers are to access the purpose-built berth (pontoons located off the east of Albert Pier) via Albert Pier.

The cruise area is out of the ISPS boundary.

4. Location and spatial requirements

Table 1 provides a comparison of the spatial requirements identified and Option 4.2.

	Spatial requirements identified	Option 4.2
Berth	The tender berth length must be 75 m long with a depth of 2.2 m.	✓
Landside space	2,500 m^2 of space would be required for waiting passengers, taxis and buses.	✓
Facilities	Toilets need to be located close to embarkation / disembarkation point. The area that is used for passengers to wait for tenders would benefit if it was covered or at least part covered.	✓
Access and ISPS	Berths need to have direct access to the sea with minimal tidal constraints as existing or preferably no tide constraint. Navigation channels and turning circles shall comply with best practice for width and depth e.g. PIANC WG121 Report. Landside access must be provided for cars, taxis and potentially foot passengers.	✓
Location requirements	Cruise ship passengers should be within walking distance of the town centre.	✓

Table 1: Comparison of Option 4.2, additional tender berth, with spatial requirements

5. Assumptions

- It is assumed that even though the existing tender berths have less depth than required, this are currently been used and fit for purpose and therefore, could be kept in the future.

6. Costs

The implementation cost is between **£ 1,4** and **2,3** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

Guernsey Future Harbour Requirements 2020

Activity and Location:					Date:		Job Number:	
St Peter Port, Guernsey					06/07/2020		B2382200	
				Estimated By:			ILE	
Sheet Title:				Jacobs				
Option 3.2 Cost Summary				Status of Design:				
				Concept/Planning				
Item	**Quantity**	**Units**	**Unit Cost**		**Subtotals**		**Total Cost**	
Preliminaries							£	215,500.00
General Conditions and Mod/Demob	20%	-	-		£	215,500.0		
Pontoons								
Pontoons (including fingers, services and moorings)	75	m	£	5,030.0	£	377,250.0	£	377,250.00
Access bridge	560	m	£	1,250.0	£	700,000.0	£	700,000.00
Intermediate support for access bridge	1	EA	£	50,000.0	£	50,000.	£	50,000.0
						Infrastructure Subtotal	**£**	**1,300,000.00**
Planning, Design, Permits, and Construction Support						7%	£	91,000.0
Infrastructure Construction Total							**£**	**1,391,000.00**
Optimism Bias						66%	£	918,100.00
						Total Project Cost	**£**	**2,300,000.00**

*Percentages used for Contingency, Design and Permits only consider infrastructure cost and excludes cost of equipment.

Future Harbour Requirements Study 2020

Option 5.1 - Technical Note

B2382200-JAC-02-XX-TN-C-0011 | P02

08 October 2020

States of Guernsey

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	28/08/20	ISSUE	IL	CH	MSS	MSS
P02	08/10/20	Final	IL	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 5.1 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0011
Revision:	P02
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark Sherlock-Smith
Author:	Inma Lastres
File Name:	Option 5.1 - technical note P02

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Contents

1. Introduction

The shortlist identifies that all recreational sectors (with the exception of local yachts and super yachts) can be provided by a Do Minimum option. This demonstrates that for most recreational sectors there is no harbour specific requirement to expand current berth areas. However, future spatial requirements do require a modification to the marine area for local yachts and super yachts to meet high demand.

The shortlist options identified that the preferred option is to retain local yachts within St Peter Port harbour. Super yachts are currently accommodated on commercial berths that are available when they arrive, as there is no dedicated berth for these. The Spatial Requirements study identified that providing a single berth would meet the present demand and would allow growth in this sector.
No additional requirements have been forecast for visiting yachts other than landside facilities such as showers, toilets and fuelling areas.

The Do Minimum Option 5.1 considered in this technical note consists of increasing the number of berths for local yachts increasing the marina spaces within St Peter Port and St Sampson's Harbours to meet future needs and forecast recreational (high scenario) requirements and providing a super yacht dedicated berth in St Peter Port harbour.

2. Harbour layout

Option 5.1 considers providing additional marine facilities for the local yachts (converting the existing Careening Hard into a marina in St Peter Port and increasing the number of moorings in St Sampson's harbour) and providing a dedicated berth for super yachts in St Peter Port harbour.

In St Peter Port harbour, a new breakwater extends from Castle Pier into the harbour, protecting the super yacht berth and additional berths for larger local yachts.

The proposed layout is as shown in Figure 1.

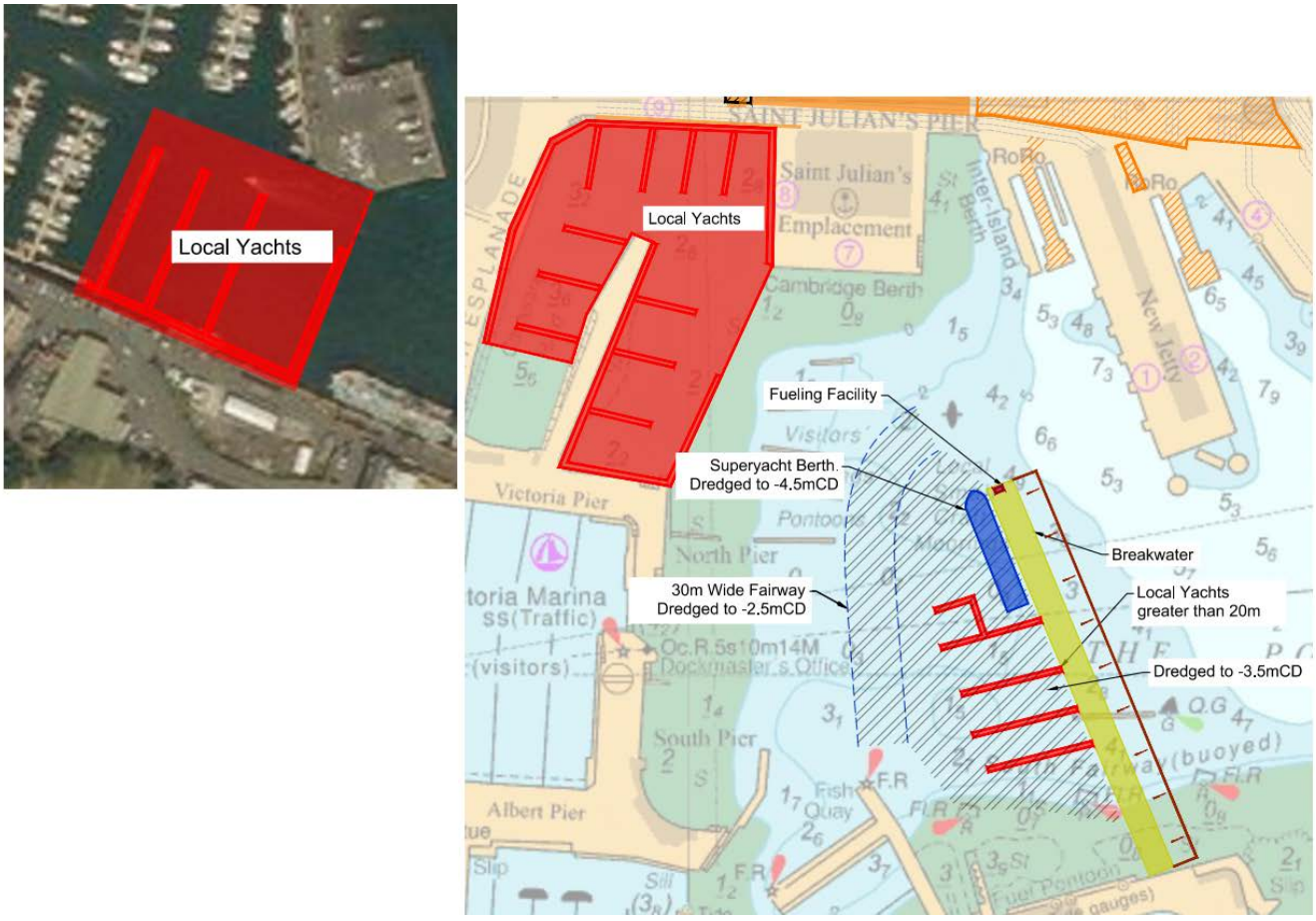

Figure 1: Layout for recreational sectors – Option 5.1 (St Sampson's harbour at the top left, St Peter Port harbour bottom right)

3. Option description

Option 5.1 considers providing additional marine facilities for local yachts and providing a dedicated berth for super yachts in St Peter Port harbour, as well as landside facilities for both recreational sectors.

3.1 Berths

3.1.1 Local yachts

The Spatial Requirements report outlines the need of increasing the number of berths by 343 berths/ 32,486 m^2 to cover the high scenario demand in 2050. Therefore, additional moorings are proposed in the form of pontoons within the existing Careening Hard (see Figure 1) and towards the mouth of St Sampson's harbour.

Option 5.1 assumes that the bulk liquid (hydrocarbons) commercial activities are moved out of St Sampson's harbour, and therefore a larger marina (see Figure 1) could be located within the harbour, leaving sufficient space at the South Quay to accommodate bulk solids vessels for aggregates. To create the additional marina space at the both locations, breakwaters are to be constructed (see Figure 1) and sills across the entrance, to maintain a suitable minimum water depth within each marina basin.

A breakwater is to be constructed to shelter Victoria Marina and additional pontoons on the sheltered (west) side. These pontoons provide additional moorings for local yachts including local yachts greater than 20 m in length (see Figure 1). Dredging is required in this area to allow both for berthing and accessing the pontoons at the back of the breakwater (see Figure 1).

3.1.2 Super yachts

There is currently no dedicated berth for super yachts. A dedicated berth for super yachts is provided on the sheltered side of the proposed breakwater. A dredged berth pocket would be required as shown in Figure 1.

3.2 Landside space

Space for toilets and showers for local yachts, a fuelling facility for super yachts were identified as requirements in the Spatial Requirements report. However, for Option 5.1 it is considered these could be provided within the allocated landside space. No additional landside space is required.

3.3 Facilities

Facilities such as toilets and showers should be provided at the new marinas.

A fuelling facility for super yachts should be provided.

All pontoons should be provided with water, power and lighting.

3.4 Access and ISPS fence

Local yachts and super yachts are outside of the ISPS area.

Albert Marina and St Sampson's harbour Marina are to remain unaltered and so is the access to both of them.

Access to the marina located on the Careening Hard is provided along Victoria Pier and St Julian's Pier.

Access to the landside area of the designated area for super yachts is provided along Castle Pier.

4. Location and spatial requirements

Table 1 provides a comparison of the spatial requirements identified and Option 5.1.

	Spatial requirements identified	Option 5.1
Local Yachts		
Berth	2,110 berths are required to suit the high scenario forecast	✓
Landside space	Pontoons should be connected to the shore by access ramps with suitable gradients	✓
Facilities	Toilet and shower facilities should be provided Pontoons should be provided with water, power and lighting	
Access and ISPS	All tide access is a preference for local yachts	✓
Location requirements	Berths for local yachts should be located in sheltered water	✓
Super yacht		
Berth	1 No. 90 m long berth with a depth of 4.5 m	✓
Landside space	See Facilities below	✓
Facilities	Landside access needs to be provided for crew and for tankers Pontoons should be connected to the shore by access ramps with suitable gradients Pontoons should be provided with water, power and lighting Safety ladders and hand holds should be provided	✓
Access and ISPS	All tide access is required for super yachts, noting that super yachts deeper than 4 m draught can use the commercial berths if required	✓
Location requirements	Berths for visiting super yachts should be located in sheltered water and close to the town centre, restaurants, shops and other amenities	✓

Table 1: Comparison of Option 5.1, Do Minimum for the recreational sectors, with spatial requirements

5. Assumptions

- Dredging is required to achieve suitable water depths for local yachts and super yachts.
- An alternative fairway is proposed around the breakwater, as the existing fairway will not be operational due to the breakwater construction.
- The number of boats that can be accommodated in each pontoon has been estimated using the existing number of moorings within the existing marinas.

6. Costs

The implementation cost is between **£62** and **£103** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

Guernsey Future Harbour Requirements 2020

Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				13/08/2020	B2382200
			Estimated By:	ILE	
Sheet Title:			Jacobs		
Option 5.1 Recreational - Cost Summary			Status of Design:		
			Concept/Planning		

Item	Quantity	Units	Unit Cost	Subtotals	Total Cost
Preliminaries					£ 9,549,900.00
General Conditions and Mod/Demob	20%	-	-	£ 9,549,900.00	
Breakwater RHDV					£ 15,138,800.00
Armour Units (CoreLoc/Xbloc)	40,000	Cu.m	£ 158.00	£ 6,320,000.00	
Underlayer	25,000	Cu.m	£ 72.00	£ 1,800,000.00	
Core Rock	100,000	Cu.m	£ 64.00	£ 6,400,000.00	
Crown wall	1,700	Cu.m	£ 364.00	£ 618,800.00	
Dredging					£ 5,280,000.00
Dredging (Rock) inc disposal	40,000	Cu.m	£ 132.00	£ 5,280,000.00	
Quay					£ 20,664,000.00
Blockwork Quay Wall	480	Lin m	£ 41,000.00	£ 19,680,000.00	
Quay Furniture	1	EA	£ 984,000.00	£ 984,000.00	
Pontoons					£ 6,666,500.00
Pontoons (including fingers, access bridges, services and moorings)	1,990	m	£ 3,350.00	£ 6,666,500.00	
Quay					£ 457,000.00
Toilets for local yachts and storage for fishermen	1	EA	£ 457,000.00	£ 457,000.00	
				Infrastructure Subtotal	**£ 57,756,200.00**
Planning, Design, Permits, and Construction Support				7%	£ 4,043,000.00
Infrastructure Construction Total					**£ 62,000,000.00**
Optimism Bias				66%	**£ 40,920,000.00**
				Total Project Cost	**£ 103,000,000.00**

*Percentages used for Contingency, Design and Permits only consider infrastructure cost and excludes cost of equipment.

Future Harbour Requirements Study 2020

Option 5.2 - Technical Note

B2382200-JAC-02-XX-TN-C-0012 | P02

08 October 2020

States of Guernsey

-

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	28/08/20	ISSUE	IV	CH	MSS	MSS
P02	08/10/20	Final	IV	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 5.2 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0012
Revision:	P02
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark Sherlock-Smith
Author:	Inma Lastres
File Name:	Option 5.2 - technical note P02

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Contents

1. Introduction

The shortlist identifies that all recreational sectors (with the exception of local yachts and super yachts) can be provided by a Do Minimum option. This demonstrates that for most recreational sectors there is no harbour specific requirement to expand current berth areas. However, future spatial requirements do require a modification to the marine area for local yachts and super yachts to meet high demand.

The shortlist includes options to retain local yachts within St Peter Port harbour. Super yachts are currently accommodated on commercial berths if they are available when they arrive, as there is no dedicated berth for super yachts. The Spatial Requirements study identified that providing a single berth would meet the present demand and would allow growth in this sector.

No additional requirements have been forecast for visiting yachts other than landside facilities such as showers, toilets and fuelling areas.

The Do Minimum Option 5.2 considered in this technical note consists of increasing the number of berths for local yachts by increasing the marina spaces within St Peter Port harbour to meet future needs and forecast recreational (high scenario) requirements, providing a super yacht dedicated berth in St Peter Port harbour and re-positioning the fishing sector berths to accommodate a yacht marina.

Option 5.2 could be implemented while retaining the existing commercial activities at their current locations in St Peter Port harbour.

2. Harbour layout

Option 5.2 considers providing additional marine facilities for the local yachts (converting the existing Careening Hard and Albert dock into marinas).

A new breakwater extends from Castle Pier into the Harbour, protecting pontoons for local yachts and providing a dedicated berth for super yachts. The fishing fleet is to be relocated on the dedicated area created for the fishing fleet on the sheltered side of the breakwater.

The proposed layout is as shown in Figure 1.

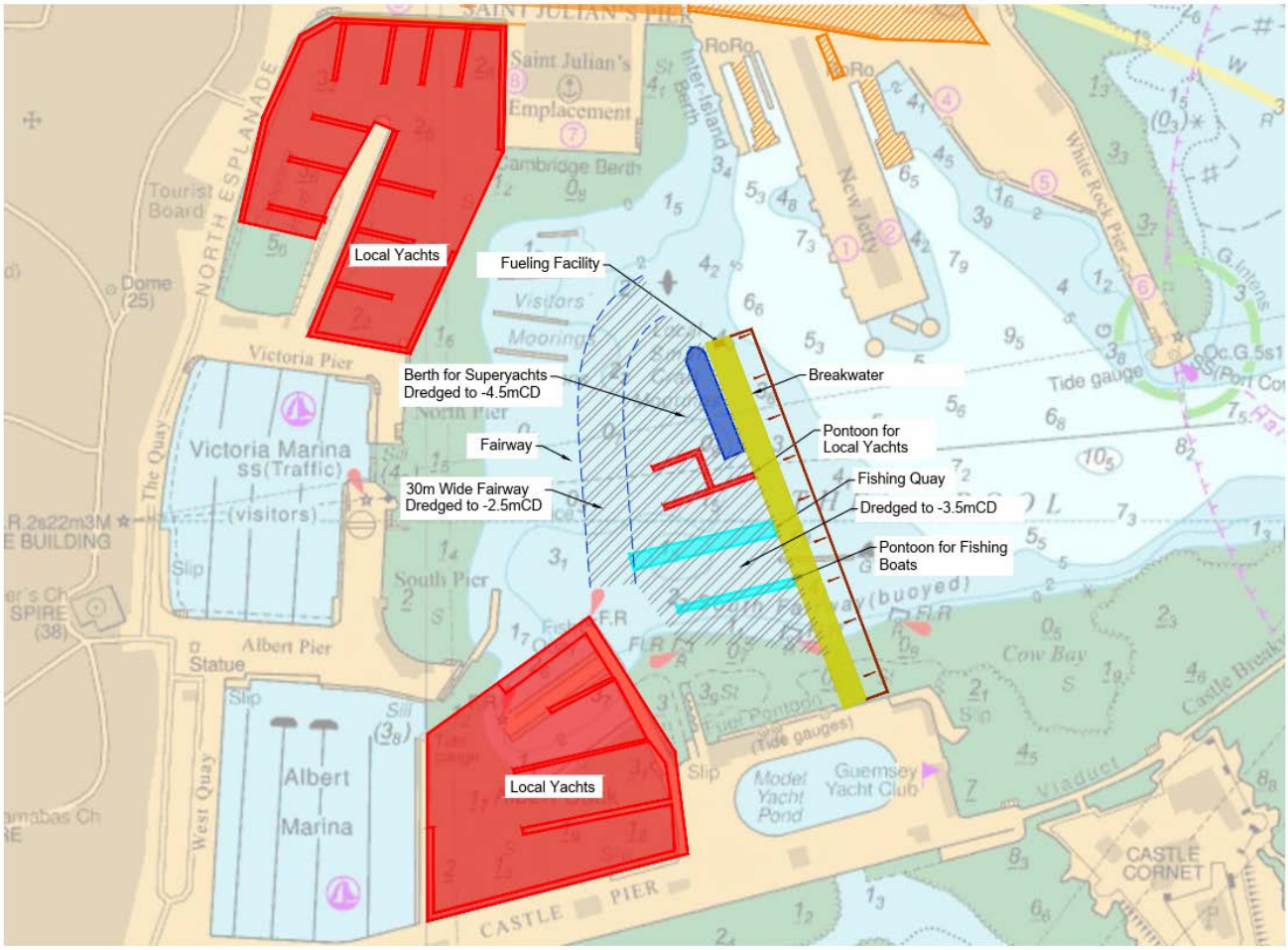

Figure 1: Layout for reconfiguration of the existing landside areas – Option 5.2

3. Option description

Option 5.2 considers providing additional marine facilities for local yachts and providing a dedicated berth for super yachts in St Peter Port harbour, as well as landside facilities for both recreational sectors. The fishing fleet would be relocated to the area designated for it. No additional requirements have been identified for fishing boats.

3.1 Berths

3.1.1 Local yachts

The Spatial Requirements report outlines the need of increasing the number of berths by 343 berths/ 32,486 m^2 to cover the high scenario demand in 2050. Therefore, additional moorings are proposed to be installed in the form of pontoons within the existing Careening Hard and Albert Dock (see Figure 1). To create the additional marina space at the both locations, breakwaters are to be constructed (see Figure 1) and sills across the entrance, to maintain a suitable minimum water depth within each marina basin.

A breakwater is to be constructed to shelter Victoria Marina with additional pontoons on the sheltered (west) side. Some of these pontoons are to accommodate some of the additional moorings required for local yachts. Dredging is required in this area to allow both for berthing and accessing the pontoons at the back of the breakwater (see Figure 1).

3.1.2 Super yachts

There is currently no dedicated berth for super yachts. A dedicated berth for super yachts is provided on the sheltered side of the proposed breakwater. A dredged berth pocket would be required as shown in Figure 1.

3.1.3 Fishing sector

The fishing fleet is to be relocated to a new designated quay and pontoon on the sheltered side of the breakwater. Dredging is required in this area to allow both for berthing and accessing the pontoons at the back of the breakwater (see Figure 1).

No additional moorings are required for the fishing sector, and therefore, an arrangement similar to the existing one in Albert Dock is proposed at the new proposed location.

3.2 Landside space

Space for toilets and showers for local yachts, a fuelling facility for super yachts and toilets, indoor and outdoor storage for the fishing sector were identified as requirements in the Spatial Requirements report. However, for Option 5.2 it is considered these could be provided within the existing/developed landside space. No additional landside space is required.

3.3 Facilities

Facilities such as toilets and showers should be provided to the new marinas.

A fuelling facility for super yachts should be provided.

All pontoons should be provided with water, power and lighting

The fishing boat mooring area requires: fresh water, electricity, lighting, toilet facilities, hoist for loading and unloading. Access to indoor and outdoor storage and clean seawater are also required.

3.4 Access and ISPS fence

Local yachts and super yachts and fishing fleet are outside of the ISPS area.

Albert Marina is to remain unaltered and so is the access to it. Access to the new marina located in the Careening Hard is provided along Victoria Pier and St Julian's Pier.

Access to the landside area designated for super yachts, new proposed area for the fishing fleet and to the marina located in Albert dock is provided along Castle Pier access road.

4. Location and spatial requirements

Table 1 provides a comparison of the spatial requirements identified and Option 5.2.

	Spatial requirements identified	Option 5.2
Local yachts		
Berth	2,110 berths are required to suit the high scenario forecast	✓
Landside space	Pontoons should be connected to the shore by access ramps with suitable gradients	✓
Facilities	Toilet and shower facilities should be provided Pontoons should be provided with water, power and lighting	
Access and ISPS	All tide access is a preference for local yachts	✓
Location requirements	Berths for local yachts should be located in sheltered water	✓
Super yacht		
Berth	1 No. 90 m long berth with a depth of 4.5 m	✓
Landside space	See Facilities below	✓
Facilities	Landside access needs to be provided for crew and for tankers Pontoons should be connected to the shore by access ramps with suitable gradients Pontoons should be provided with water, power and lighting Safety ladders and hand holds should be provided	✓
Access and ISPS	All tide access is required for super yachts, noting that super yachts deeper than 4 m draught can use the commercial berths if required	✓
Location requirements	Berths for visiting super yachts should be located in sheltered water and located close to the town centre, restaurants, shops and other amenities	✓
Fishing		
Berth	17,064 m^2 marine area, 149 berths divided in: Fishing areas: 8,000 m^2 and 28 berths Marina areas: 4,528 m^2 and 68 berths Other areas: 4,536 m^2 and 53 berths	✓
Landside space	Outside and inside storage areas Indoor storage total of 150 m^2 for 20 units and outdoor storage total of 200 m^2 for 20 unit	✓
Facilities	Toilet facilities Pontoons/quay should be provided with water, power and lighting A hoist for loading and unloading Safety ladders and hand holds should be provided	✓
Access and ISPS	Berth locations should be accessible by vehicles All tide access is required for commercial fishing vessels	✓

	Spatial requirements identified	Option 5.2
	Pontoons should be connected to the shore by access ramps with suitable gradients	
Location requirements	Access to clean seawater	✓

Table 1: Comparison of Option 5.2, Do Minimum for the recreational sectors, with spatial requirements

5. Assumptions

- Dredging is required to achieve suitable water depths for local yachts, super yachts and fishing fleet.
- An alternative fairway is proposed around the breakwater, as the existing fairway will not be operational due to the breakwater construction.
- The number of boats that can be accommodated in each pontoon has been estimated using the existing number of moorings within the existing marinas.

6. Costs

The implementation cost is between **£69** and **£115** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

Guernsey Future Harbour Requirements 2020					
Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				13/08/2020	B2382200
			Estimated By:	ILE	
Sheet Title:			Jacobs		
Option 5.2 Recreational - Cost Summary			Status of Design:		
			Concept/Planning		
Item	**Quantity**	**Units**	**Unit Cost**	**Subtotals**	**Total Cost**
Preliminaries					£ 10,656,800.00
General Conditions and Mod/Demob	20%	-	-	£ 10,656,800.00	
Breakwater RHDV					£ 15,138,800.00
Armour Units (CoreLoc/Xbloc)	40,000	Cu.m	£ 158.00	£ 6,320,000.00	
Underlayer	25,000	Cu.m	£ 72.00	£ 1,800,000.00	
Core Rock	100,000	Cu.m	£ 64.00	£ 6,400,000.00	
Crown wall	1,700	Cu.m	£ 364.00	£ 618,800.00	
Dredging					£ 5,280,000.00
Dredging (Rock) inc disposal	40,000	Cu.m	£ 132.00	£ 5,280,000.00	
Quay					£ 25,830,000.00
Blockwork Quay Wall	600	Lin m	£ 41,000.00	£ 24,600,000.00	
Quay Furniture	1	EA	£ 1,230,000.00	£ 1,230,000.00	
Pontoons					£ 7,035,000.00
Pontoons (including fingers, access bridges, services and moorings)	2,100	m	£ 3,350.00	£ 7,035,000.00	
Quay					£ 457,000.00
Toilets for local yachts and storage for fishermen	1	EA	£ 457,000.00	£ 457,000.00	
				Infrastructure Subtotal	**£ 64,397,600.00**
Planning, Design, Permits, and Construction Support				7%	£ 4,508,000.00
Infrastructure Construction Total					**£ 69,000,000.00**
Optimism Bias				66%	**£ 46,000,000.00**
				Total Project Cost	**£ 115,000,000.00**
*Percentages used for Contingency, Design and Permits only consider infrastructure cost and excludes cost of equipment.					

Future Harbour Requirements Study 2020

Option 5.3 - Technical Note

B2382200-JAC-02-XX-TN-C-0013 | P02

08 October 2020

States of Guernsey

-

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	28/08/20	ISSUE	IV	CH	MSS	MSS
P02	08/10/20	Final	IV	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 5.3 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0013
Revision:	P02
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark Sherlock-Smith
Author:	Inma Lastres
File Name:	Option 5.3 - technical note P02

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Contents

1. Introduction

The shortlist identifies that all recreational sectors (with the exception of local yachts and super yachts) can be provided by a Do Minimum option. This demonstrates that for most recreational sectors there is no harbour specific requirement to expand current berth areas. However, future spatial requirements do require a modification to the marine area for local yachts and super yachts to meet high demand.

The shortlist includes options to retain local yachts within St Peter Port harbour. Super yachts are currently accommodated on commercial berths if they are available when they arrive, as there is no dedicated berth for super yachts. The Spatial Requirements study identified that providing a single berth would meet the present demand and would allow growth in this sector.

No additional requirements have been forecast for visiting yachts other than landside facilities such as showers, toilets and fuelling areas.

The Do Minimum Option 5.3 considered in this technical note consists of increasing the number of berths for local yachts, increasing the marina spaces within St Peter Port harbour to meet future needs and forecast recreational (high scenario) requirements, providing a super yacht dedicated berth in St Peter Port harbour and moving the fishing sector berths to vacated commercial berths closer to the harbour entrance.

Option 5.3 assumes that the existing commercial activities have been moved from their current locations in St Peter Port harbour thus freeing up space within the Harbour.

2. Harbour layout

Option 5.3 considers providing additional marine facilities for the local yachts (converting the existing Careening Hard and converting Albert dock into marinas) and providing a dedicated berth for super yachts in St Peter Port harbour. The fishing fleet is to be relocated outside of Albert Dock, on the area in between berths 2 and 4/5.

A new breakwater extends from Castle Pier into the harbour, protecting pontoons and additional berths for larger local yachts.

The proposed layout is as shown in Figure 1.

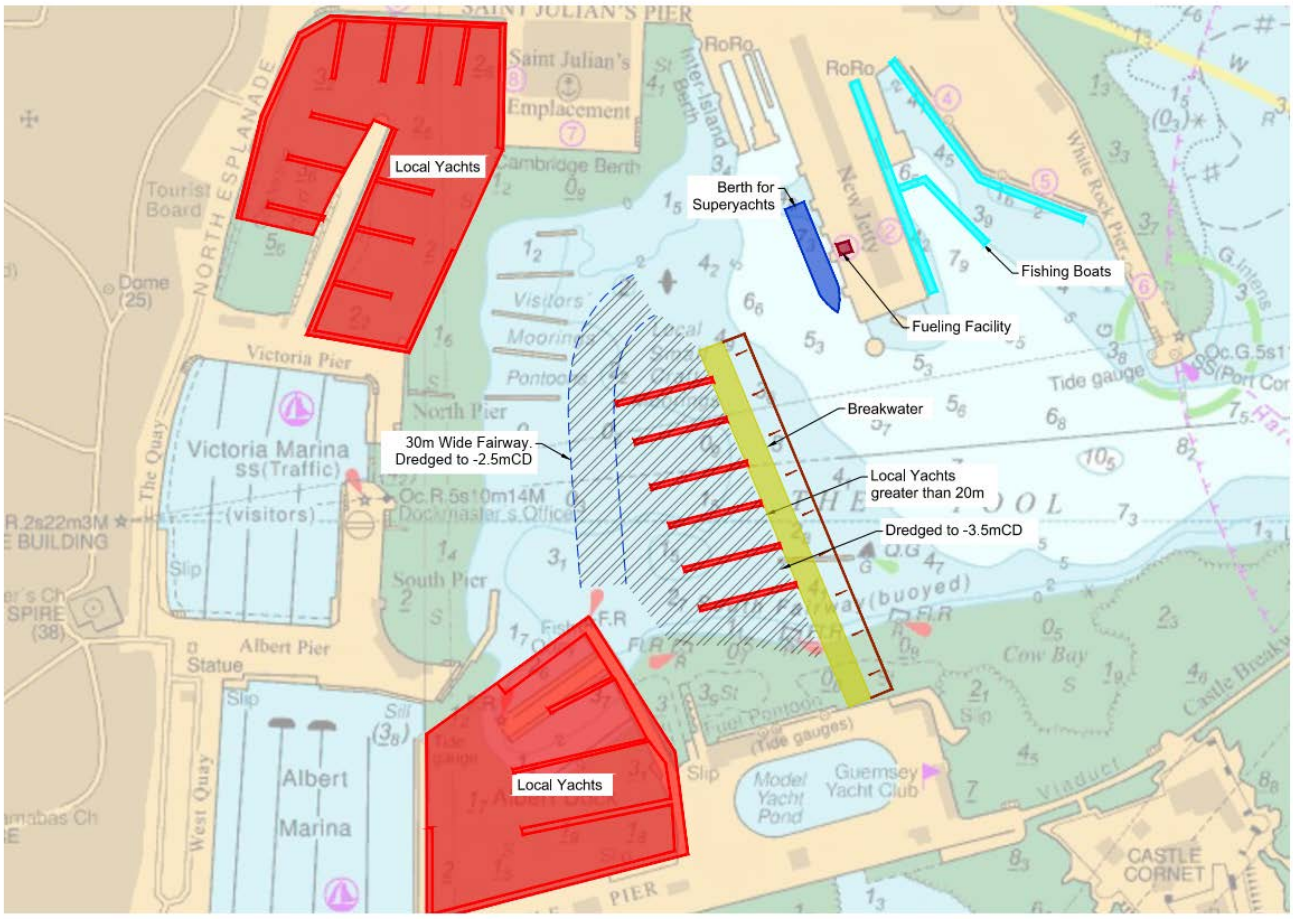

Figure 1: Layout for reconfiguration of the existing landside areas – Option 5.3.

3. Option description

Option 5.3 considers providing additional marine facilities for local yachts and providing a dedicated berth for super yachts in St Peter Port harbour, as well as landside facilities for both recreational sectors. The fishing fleet would be relocated to the area designated for it. No additional requirements have been identified for fishing boats.

Option 5.3 assumes that the existing commercial activities have been moved from their current locations in St Peter Port harbour thus freeing up space within the harbour.

3.1 Berths

3.1.1 Local yachts

The Spatial Requirements report outlines the need to increase the provision for local yachts by 343 berths/ 32,486 m^2 to cover the high scenario demand in 2050. Therefore, additional moorings are proposed in the form of pontoons within the existing Careening Hard and Albert Dock (see Figure 1). To create the additional marina space at the both locations, breakwaters are to be constructed and sills across the entrance, to maintain a suitable minimum water depth within each marina basin.

A breakwater is to be constructed to shelter Victoria Marina with additional pontoons on the sheltered (west) side. These pontoons provide additional moorings for local yachts including local yachts greater than 20 m in length. Dredging is required in this area to allow both for berthing and accessing the pontoons at the back of the breakwater (see Figure 1).

3.1.2 Super yachts

There is currently no dedicated berth for super yachts. A dedicated berth for super yachts is provided in berth 1, currently dedicated to RoRo vessels. The depth at this berth is between 4.8 and 7 m below CD. This is sufficient depth to accommodate super yachts.

3.1.3 Fishing sector

The fishing fleet is to be relocated to the quay and pontoons currently designated for the RoRo and LoLo sectors. This can be accommodated without dredging as there is enough water depth for the fishing boats at these locations.

3.2 Landside space

Space for toilets and showers for local yachts, a fuelling facility for super yachts and toilets, indoor and outdoor storage for the fishing sector were identified as requirements in the Spatial Requirements report. However, for Option 5.3 it is considered these could be provided within the allocated landside space. No additional landside space is required.

3.3 Facilities

Facilities such as toilets and showers should be provided at the new marinas.

A fuelling facility for super yachts should be provided.

All pontoons should be provided with water, power and lighting

The fishing boat mooring area requires: fresh water, electricity, lighting, toilet facilities, hoist for loading and unloading. Access to indoor and outdoor storage and clean seawater are also required.

3.4 Access and ISPS fence

Local yachts, fishing fleet and super yachts are outside of the ISPS area.

Albert Marina is to remain unaltered and so is the access to it. Access to the new marina located in the Careening Hard is provided along Victoria Pier and St Julian's Pier.

Access to the landside area designated for yachts on the sheltered side of the breakwater and to the marina located in Albert dock is provided along Castle Pier access road.

Access for fishing vessels and super yachts is through St Julian's Pier, the New Jetty and White Rock.

4. Location and spatial requirements

Table 1 provides a comparison of the spatial requirements identified and Option 5.3.

	Spatial requirements identified	Option 5.3
Local Yachts		
Berth	2110 berths are required to suit the high scenario forecast	✓
Landside space	Pontoons should be connected to the shore by access ramps with suitable gradients	✓
Facilities	Toilet and shower facilities should be provided Pontoons should be provided with water, power and lighting	✓
Access and ISPS	All tide access is a preference for local yachts	✓
Location requirements	Berths for local yachts should be located in sheltered water	✓
Super yacht		
Berth	1 No. 90 m long berth with a depth of 4.5 m	✓
Landside space	See Facilities below	✓
Facilities	Landside access needs to be provided for crew and for tankers Pontoons should be connected to the shore by access ramps with suitable gradients Pontoons should be provided with water, power and lighting Safety ladders and hand holds should be provided	✓
Access and ISPS	All tide access is required for super yachts, noting that super yachts deeper than 4 m draught can use other commercial berths if required	✓
Location requirements	Berths for visiting super yachts should be located in sheltered water and located close to the town centre, restaurants, shops and other amenities	✓
Fishing		
Berth	17,064 m^2 marine area, 149 berths divided in: Fishing areas: 8,000 m^2 and 28 berths Marina areas: 4,528 m^2 and 68 berths Other areas: 4,536 m^2 and 53 berths	✓
Landside space	Outside and inside storage areas Indoor storage total of 150 m^2 for 20 units and outdoor storage total of 200 m^2 for 20 unit	✓
Facilities	Toilet facilities Pontoons/quay should be provided with water, power and lighting A hoist for loading and unloading Safety ladders and hand holds should be provided	✓
Access and ISPS	Berth locations should be accessible by vehicles All tide access is required for commercial fishing vessels	✓

	Spatial requirements identified	Option 5.3
	Pontoons should be connected to the shore by access ramps with suitable gradients	
Location requirements	Access to clean seawater	✓

Table 1: Comparison of Option 5.3, Do Minimum for the recreational sectors, with spatial requirements.

5. Assumptions

- Dredging is required to achieve suitable water depths for local yachts behind the breakwater.
- An alternative fairway is proposed around the breakwater, as the existing fairway will not be operational due to the breakwater construction.
- The number of boats that can be accommodated in each pontoon has been estimated using the existing number of moorings within the existing marinas.

6. Costs

The implementation cost is between **£63** and **£105** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

Guernsey Future Harbour Requirements 2020					
Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				13/08/2020	B2382200
			Estimated By:		ILE
Sheet Title:			Jacobs		
Option 4.3 Recreational - Cost Summary			Status of Design:		
			Concept/Planning		
Item	**Quantity**	**Units**	**Unit Cost**	**Subtotals**	**Total Cost**
Preliminaries					£ 9,812,200.00
General Conditions and Mod/Demob	20%	-	-	£ 9,812,200.00	
Breakwater RHDV					£ 15,138,800.00
Armour Units (CoreLoc/Xbloc)	40,000	Cu.m	£ 158.00	£ 6,320,000.00	
Underlayer	25,000	Cu.m	£ 72.00	£ 1,800,000.00	
Core Rock	100,000	Cu.m	£ 64.00	£ 6,400,000.00	
Crown wall	1,700	Cu.m	£ 364.00	£ 618,800.00	
Dredging					£ 3,960,000.00
Dredging (Rock) inc disposal	30,000	Cu.m	£ 132.00	£ 3,960,000.00	
Pontoons					£ 8,006,500.00
Pontoons (including fingers, access bridges, services and moorings)	2,390	m	£ 3,350.00	£ 8,006,500.00	
Quay					£ 21,955,500.00
Blockwork Quay Wall	510	Lin m	£ 41,000.00	£ 20,910,000.00	
Quay furniture	1	EA		£ 1,045,500.00	
				Infrastructure Subtotal	**£ 58,873,000.00**
Planning, Design, Permits, and Construction Support				7%	£ 4,121,000.00
Infrastructure Construction Total					**£ 63,000,000.00**
Optimism Bias				66%	**£ 42,000,000.00**
				Total Project Cost	**£ 105,000,000.00**
*Percentages used for Contingency, Design and Permits only consider infrastructure cost and excludes cost of equipment.					

Future Harbour Requirements Study 2020

Option 6.1 - Technical Note

B2382200-JAC-02-XX-TN-C-0014 | P02

08 October 2020

States of Guernsey

-

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	28/08/20	ISSUE	IV	IL	MSS	MSS
P02	08/10/20	Final	IV	MSS	HB	MSS

Future Harbour Requirements Study 2020

Project No:	B2382200
Document Title:	Option 6.1 - Technical Note
Document No.:	B2382200-JAC-02-XX-TN-C-0014
Revision:	P02
Document Status:	Final
Date:	08 October 2020
Client Name:	States of Guernsey
Client No:	-
Project Manager:	Mark Sherlock-Smith
Author:	Isabel Vidal
File Name:	Option 6.1 - technical note P02

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Contents

1. Introduction

Havelet Bay is an attractive location for providing additional space for leisure facilities given its proximity to St Peter Port harbour and semi enclosed nature. Option 6.1 allows some leisure sectors to be moved out of St Peter Port harbour, potentially reducing congestion or freeing up space for other activities.

2. Harbour layout

The marina Option 6.1 provides in Havelet Bay will be protected by a breakwater with an elbow, protecting from easterly waves and an additional detached breakwater that will protect the harbour from waves coming from the South.

The proposed layout is as shown in Figure 1.

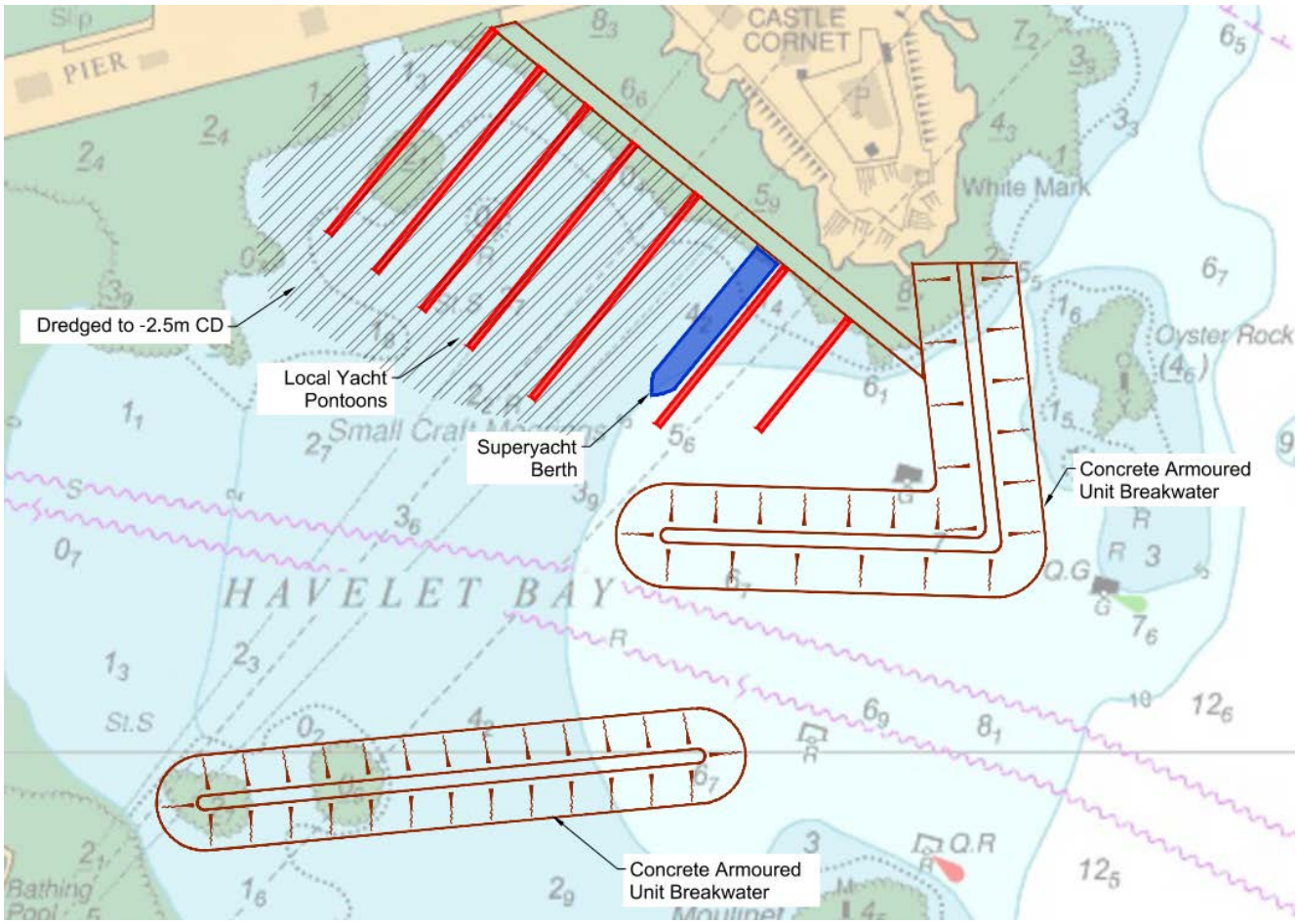

Figure 1: Layout for the marina – Option 6.1

3. Option description

This option considers the development of a new port facility.

3.1 Berths

Breakwater construction is proposed to provide large sheltered areas with variable water depth, which could be developed in stages for a variety of leisure activities.

3.1.1 Local and visiting yachts

Additional marina space and moorings for local yachts and visiting yachts is to exceed the high demand scenario, providing at least 350 additional berths for yachts. A small amount of dredging would be advisable for the yachts to come in and berth.

3.1.2 Super yachts

A dedicated super yacht berth(s) could be developed. super yacht berth would be all tide without needing any dredging in the berth pocket. However the access would be limited to MLWS if no dredging of an access channel is undertaken.

3.2 Landside space and facilities

3.2.1 Local and visiting yachts

The maximum distance between the pontoons and the closest toilets and showers facilities is no longer than 250m, so toilet facilities can be provided at the existing pier (Castle Pier).

3.2.2 Super yachts

A fuelling facility for super yachts should be provided as identified in the Spatial Requirements report.

3.3 Access and ISPS fence

Leisure activities are outside the ISPS delimitation line.

Navigational access for the super yachts is constrained to MLWS if no dredging is undertaken.

Foot accesses to the marina will be through the Castle Pier.

4. Location and spatial requirements

Table 1 provides a comparison of the spatial requirements identified and Option 6.1.

	Spatial requirements identified	Option 6.1
Local yachts		
Berth	2,110 berths are required to suit the high scenario forecast	✓
Landside space	Pontoons should be connected to the shore by access ramps with suitable gradients	✓
Facilities	Toilet and shower facilities should be provided Pontoons should be provided with water, power and lighting	✓
Access and ISPS	All tide access is a preference for local yachts	✓
Location requirements	Berths for local yachts should be located in sheltered water	✓
Visiting yachts		
Berth	25,000m^2	✓
Landside space	2 x 35 m^2 for shower and toilet blocks	✓
Facilities	Toilet and shower facilities Water supply Electric hook up on some berths Refuse disposal Wi-Fi	✓
Access and ISPS	All tide access for a proportion of the visiting yachts Pontoons connected to the shore by access ramps with suitable gradients	✓
Location requirements	Located in sheltered water Close to the town centre, restaurants, shops and other amenities	✓
Super yacht		
Berth	1 No. 90 m long berth with a depth of 4.5 m	✓
Landside space	See Facilities below	✓
Facilities	Landside access needs to be provided for crew and for tankers Pontoons should be connected to the shore by access ramps with suitable gradients Pontoons should be provided with water, power and lighting Safety ladders and hand holds should be provided	✓
Access and ISPS	All tide access is required for super yachts, noting that super yachts deeper than 4 m draught can use the commercial berths if required	✓
Location requirements	Berths for visiting super yachts should be located in sheltered water and close to the town centre, restaurants, shops and other amenities	✓

Table 1: Comparison of Option 6.1 with spatial requirements

5. Assumptions

- If Option 6.1 is selected for further development, a navigation simulation model would be necessary to ensure that the super yacht has no access constraints (apart from MLWS).

- If Option 6.1 is selected for further development, it is strongly suggested to perform a wave penetration and agitation model of the harbour to ensure that the leisure berthed ship movements are limited to the recommended values.

6. Costs

The implementation cost is between **£63** and £**105** million. Costs are for capital works and do not include existing and ongoing maintenance costs and costs for equipment.

Guernsey Future Harbour Requirements 2020

Activity and Location:				Date:	Job Number:
St Peter Port, Guernsey				06/08/2020	B2382200
			Estimated By:		IV
Sheet Title:			Jacobs		
6.1 Option Cost Estimate Summary			Status of Design:		
			Concept/Planning		

Item	Quantity	Units	Unit Cost	Subtotals	Total Cost
Preliminaries					£ 9,904,500.00
General Conditions and Mod/Demob	20%	-	-	£ 9,904,500.00	
Breakwater North					£ 12,014,800.00
Armour Units (CoreLoc/Xbloc)	31,771	Cu.m	£ 158.00	£ 5,019,800.00	
Underlayer	19,857	Cu.m	£ 72.00	£ 1,429,700.00	
Core Rock	79,428	Cu.m	£ 64.00	£ 5,083,400.00	
Crown wall	1,324	Cu.m	£ 364.00	£ 481,900.00	
Breakwater South					£ 10,146,300.00
Armour Units (CoreLoc/Xbloc)	28,597	Cu.m	£ 158.00	£ 4,518,400.00	
Underlayer	17,158	Cu.m	£ 72.00	£ 1,235,400.00	
Core Rock	68,633	Cu.m	£ 64.00	£ 4,392,500.00	
Dredging					£ 6,039,000.00
Dredging (Rock) inc disposal	45,750	Cu.m	£ 132.00	£ 6,039,000.00	
Quay					£ 20,923,500.00
Blockwork Quay Wall	430	Lin m	£ 41,000.00	£ 17,630,000.00	
Quay Furniture	1	EA	£ 881,500.00	£ 881,500.00	
Pontoons	720	Lin m	£ 3,350.00	£ 2,412,000.00	
Facilities					£ 398,800.00
Toilet blocks	440	Sq.m	£ 500.00	£ 220,000.00	
Fishing fleet storage	150	Sq.m	£ 1,192.00	£ 178,800.00	
				Infrastructure Subtotal	**£ 59,000,000.00**
Planning, Design, Permits, and Construction Support				7%	£ 4,130,000.00
Infrastructure Construction Total					**£ 63,000,000.00**
Optimism Bias				66%	**£ 42,000,000.00**
				Total Project Cost	**£ 105,000,000.00**

*Percentages used for Contingency, Design and Permits only consider infrastructure cost and excludes cost of equipment.

States' Trading
Supervisory Board

THE STATES OF DELIBERATION
of the
ISLAND OF GUERNSEY

STATES' TRADING SUPERVISORY BOARD

POLICY LETTER – STATES' TRADING SUPERVISORY BOARD

FUTURE HARBOUR DEVELOPMENT

The President
Policy & Resources Committee
Sir Charles Frossard House
La Charroterie
St Peter Port

6th May, 2021

Dear Sir,

Preferred date for consideration by the States of Deliberation

In accordance with Rule 4(2) of the Rules of Procedure of the States of Deliberation and their Committees, the States Trading Supervisory Board (STSB) requests that the policy letter entitled 'States' Trading Supervisory Board – Future Harbour Development' be considered at the States' meeting to be held on 16th June 2021.

The STSB was originally tasked with reporting to the States on this matter by December 2020. Due to reasons beyond the Board's control this target date was unable to be achieved. The States of Deliberation was advised at its meeting held on 25th November 2020, that this Policy Letter would be delayed, but a commitment was made at that meeting that it would be submitted in time for debate in June 2021.

Yours faithfully,

Deputy Peter Roffey
President

Deputy Charles Parkinson
Vice President

Deputy Nick Moakes
Member

Stuart Falla MBE
John Hollis
Non-States Members